

# MILITARY MEDICINE

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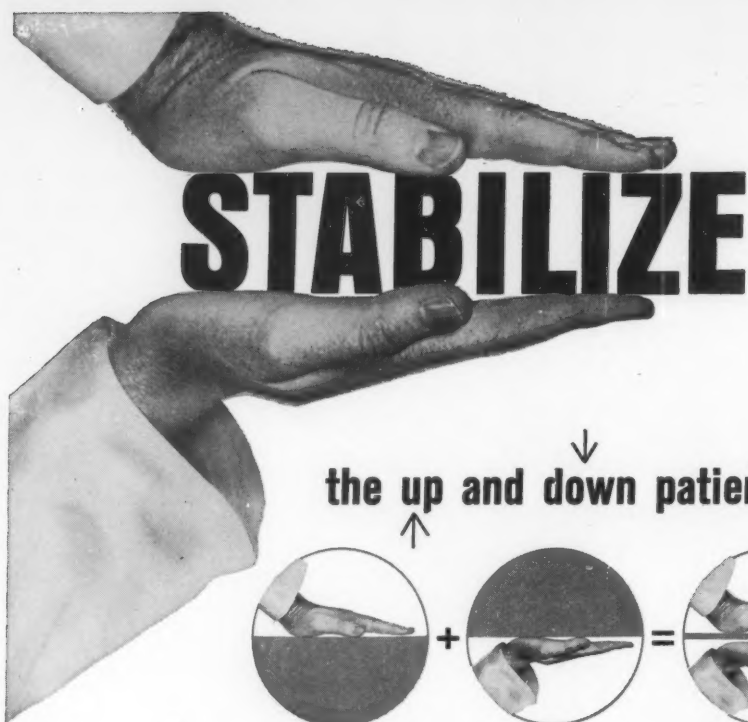
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1. Arnoff, B.: Personal communication. 2. Lazarte, J. A., and Petersen, M. C.: Personal communication.

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## MILITARY MEDICINE

## ORIGINAL ARTICLES

Authors alone are responsible for opinions expressed in their contributions

## The Military Preventive Medicine Association in Korea

By

COLONEL IRVINE H. MARSHALL, MC, USA,<sup>†</sup> AND MAJOR MARLO E. SMITH, MSC, USA<sup>‡</sup>

THE coincidence, so to speak, of the fourth anniversary of the founding of the Military Preventive Medicine Association in Korea and the nearly complete withdrawal of United Nations military forces from that nation, thus marking the imminent closing of the organization, has stimulated the preparation of this brief history of one of the most noteworthy institutions in military field medicine that grew out of operations in Korea.

The Military Preventive Medicine Association in Korea was the first and only organization of its kind in any large military operation and was born out of necessity to serve the peculiar demands and characteristics of field preventive medicine in that theater. There were many factors inherent in the Korean conflict that made the formation of such an organization desirable:

1. The international character of the forces engaged and, concomitantly, the international composition of the medical and para-medical personnel preoccupied with maintaining the health of the United Na-

tions Forces, their supporting elements, the Korean civil population and the prisoners of war. A partial listing of the nationalities of personnel involved in some phase of preventive medicine or public health in Korea will indicate the spectrum: United States (Army, Air Force, Navy, Marine Corps, and civilians), British Commonwealth (England, Scotland, Canada, Australia, etc.), Korea, Italy, Sweden, Germany, Peru, Thailand, Colombia, Ethiopia, Philippines, Mexico, Denmark, Norway, etc. It can be readily seen that with preventive medicine talent from world-wide sources brought to bear on similar problems in a comparatively small area of operations, there was great need for a mechanism to coordinate their efforts. It was plain common sense to organize all the various public health workers into a harmonious, flexible group to work together in seeking solutions to common problems. In addition, each representative and every nation had something in the way of training and experience to share with the others and the Association provided a convenient forum for the easy exchange of such information, technics and procedures.

2. Similarity of problems. It quickly became apparent that all public health workers in Korea were experiencing similar difficulties in obtaining supplies from central sources and combined allocations; they were

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meeting with similar health problems; and seeking solutions to those problems. Thus, in a sense, the Association provided a mutual aid society in which, during meetings, the members could share problems and information and discuss common interests. This was important because many of the military personnel had little or no previous experience in public health, especially in the Orient. Many of the sanitary engineers and entomologists, and even the physicians, had no experience in solving the types of problems that faced them in Korea. Therefore, the Association provided a "training school" for these people.

3. The nature of the environment. From the beginning of the conflict it was apparent that Korea presented unusually acute problems in environmental sanitation and preventive medicine. Almost every known communicable disease was endemic, ranging through leprosy, tuberculosis, infectious hepatitis, smallpox, venereal disease, intestinal parasites, Japanese B encephalitis, rabies, malaria and many others. In addition, there were at least two other major communicable diseases, plague and cholera, which have been epidemic in the Orient, and cognizance was given to their potential military importance should they occur. Besides these known epidemic and endemic diseases, one disease was encountered, the etiology and epidemiology of which remain a mystery in spite of the tremendous and costly research efforts—epidemic hemorrhagic fever.

4. The difficulties of communication. After the combat zone became more or less stabilized on or about the 38th parallel in 1951, with fighting troops located continuously across the breadth of Korea and with supporting elements distributed throughout the rest of South Korea, the preventive medicine personnel were scattered over a comparatively wide geographical area. Publications available for disseminating information and instructions to these widely scattered units and individuals were used to the maximum extent but they failed to fulfill the complete need. The nature of Korean roads

made travel for any distance extremely difficult, time-consuming and tiring. Railroads and air travel were available but limited. Telephone and telegraph service was established throughout South Korea but it seldom met the need for communication with widely scattered individuals. The frustrations of communicating with some 25-40 units or individuals by telephone, from headquarters in Seoul or Taegu, through as many as 8-10 switchboards, made this means of communication extremely time-consuming, frustrating and unsatisfactory. In the face of these poor communications, there remained a continuing need for contacting all public health personnel for the purpose of providing continuity and harmony of effort in certain fields and areas, avoiding duplication of effort, and insuring that all activities were covered by somebody. The only feasible and practical way to do this was to bring all public health personnel together at a central point at frequent intervals, issue information and instructions, seek out problems, suggest solutions or answers, share experiences and frustrations and, in general, act in concert.

5. The lack of other medical societies to meet the particular, specialized needs of preventive medicine personnel. There were a number of similar medical organizations in Korea, such as the justly famous 38th Parallel Medical Society, the Medical Societies of IX and X Corps, and the KCOMZ Medical and Dental Society. These fulfilled a worthy function of bringing together medical and dental personnel for discussion of common medical problems of a professional nature but, although their meetings were open to professional preventive medicine personnel, the nature of their programs offered little to physicians in preventive medicine and, of course, little or nothing of interest or value to para-medical workers such as sanitary engineers, entomologists, parasitologists, sanitarians, bacteriologists and the like. Furthermore, each medical society was organized on a single command basis, i.e. to serve the professional medical and dental



personnel of a certain Corps area or the Communications Zone, and the primary need of preventive medicine personnel was an all-inclusive organization to serve the workers located throughout Korea irrespective of the particular command in which they were assigned; in addition, there were members from the supporting forces in Japan who soon recognized the value of the meetings and usually participated in them.

6. The advantages of consultants in a continuous training program. Since Korea was the locus of many interesting problems and much research into various aspects of medicine, a steady stream of observers and outstanding consultants in various sciences came to the theater throughout the active conflict and following the armistice. One of the major drawing cards for these consultants was the research into the etiology and epidemiology of hemorrhagic fever. Many excellent speakers at Association meetings were individuals in Korea for the specific purpose of contributing to, and assisting with, the hemorrhagic fever research. Nearly all of the consultants and medical observers were professionally recognized in some aspect of preventive medicine and had something of interest and value to offer workers in this field. Thus it seemed highly rewarding to make their knowledge and information available to as many as possible of the preventive medicine personnel in the theater. The time of most of the consultants was limited and travel to certain areas was difficult or curtailed by various circumstances, so the only feasible way to have them meet all of the preventive medicine workers was through Association meetings.

7. The hemorrhagic fever research. A majority of the public health personnel were involved in either a major or minor role, actively or casually, directly or indirectly, in the research of hemorrhagic fever. Whether actually involved in it or not, all were highly interested in the fabulous work that was being done and wanted to keep abreast of the progress and successes being achieved. The monthly meetings of the As-

sociation provided an excellent device for a monthly progress report by the Hemorrhagic Fever Research Team. These reports, constituting virtually a refresher course in epidemiology, summarized activities of the previous month; the approaches used; the techniques discarded after trial; the infectious agents or hosts explored, considered, discarded or continued; additional needs from field workers in the nature of new or different types of specimens; new observations; new data; new ideas; etc.

8. Orientation of new personnel. It has previously been mentioned that many of the medical and para-medical workers who came to Korea had little previous experience in public health work, especially in the Orient. This deficiency was aggravated by the fact that the turnover in personnel was rapid. The normal tour of duty was 16 months although this was occasionally longer and, in the case of men assigned to combat units, often shorter. By the time a new officer had settled himself into an assignment, familiarized himself with the problems and began a constructive program of solving them, his tour of duty was nearing an end. This turnover placed a burden on the supervisory personnel (command surgeons and preventive medicine officers) of orienting new people in their jobs so that a maximum utilization of their short tours of duty could be made. Obviously this could be done on an individual basis, but the Association provided an ideal means for doing it on a mass basis. In the meetings personnel could meet other workers in the field, hear common problems and policies discussed, learn about the types and availability of various supplies, be warned of the outstanding disease hazards needing current attention, learn of efforts that were being made nationally and locally to solve certain problems, and learn of the efforts that had been tried and found adequate or inadequate. Thus one of the major contributions made by the Association to field medicine in Korea was its orientation of new personnel.

The senior author became aware of these

factors shortly after his arrival in Korea as Preventive Medicine Officer of the Eighth United States Army in the fall of 1951. With so many people from different nationalities working throughout Korea on public health problems, and with the frustrations of trying to communicate with them, he recognized the urgent need for gathering all such workers together periodically for coordination purposes.

It should be pointed out that, in December 1951 when the Association was proposed, the Eighth Army (EUSAK) was the controlling military headquarters in South Korea. The Communications Zone, with its Base Sections, and many of the civil as-

sistance commands and relief and rehabilitation agencies followed later. However, as each new headquarters was established in Korea, its preventive medicine personnel were invited to become active members of the Association. (See Table I.)

All preventive medicine personnel in EUSAK were called to the Army Headquarters in Seoul on 20 December 1951. Not all were able to come but a total of 31 persons did attend this first meeting. Basically, it was called for the purpose of acquainting each person with the others and to disseminate certain instructions and information of a preventive medicine nature. Initially, there was no thought of creating

TABLE I. ORGANIZATIONS AND UNITS REPRESENTED IN THE MILITARY PREVENTIVE MEDICINE ASSOCIATION IN KOREA

<i>United States Army</i>	
Hq. Armed Forces, Far East (AFFE)	Hq. Fifth United States Air Force
Hq. Eighth United States Army (EUSAK)	5th Epidemiological Flight
Hq. Korean Communications Zone (KCOMZ)	67th Medical Group
Hq. Korean Base Section (KBS)—later the Pusan Military Post	<i>United States Navy</i>
Hq. Prisoner of War Command (PW Command)	Commandant, Naval Forces, Far East
Korean Military Advisory Group (KMAG)	(COMNAVFE)
Corps Hqs.—I, IX, and X	Fleet Epidemic Disease Control units—#1, #2
Divisions—2nd, 3rd, 7th, 24th, 25th, 40th, 45th	(FEDCU)
Medical Groups—3rd, 8th, 15th, 75th	<i>United States Marine Corps</i>
Hospitals—48th Mobile Army Surgical, 64th Field	1st Marine Division
Laboratories—1st Medical Field, 406th Medical General	<i>Republic of Korea</i>
Medical Battalions—52nd, 163rd	Republic of Korea Army (ROKA)
Medical Detachments, Preventive Medicine, Survey—207th, 219th	Medical Field Service School (MFSS, ROKA)
Medical Detachments, Preventive Medicine, Control—10th, 38th, 78th, 151st, 153rd, 154th, 155th	<i>United Kingdom</i>
Medical Detachment, Medical Intelligence—60th	Hq. British Commonwealth Forces (BCFK)
Medical Detachment, Veterinary Food Inspection, Medium—106th	Hq. British Commonwealth Division (BCD)
37th Preventive Medicine Company	10th Field Hygiene Section
7277th Medical Research Detachment	3rd Canadian Field Ambulance Company,
6184th Mobile Dispensary	(RCAMC)
44th Engineer Construction Group	<i>Thailand</i>
7th Transportation Major Port	Thailand Battalion
Army Medical Service Graduate School (AMSGS)	<i>Miscellaneous</i>
Field Commission on Hemorrhagic Fever	United Nations Civil Assistance Command
<i>United States Air Force</i>	(UNCACK)—later the Korean Civil Assistance Command (KCAC)
Hq. Far Eastern Air Force (FEAF)	United Nations Korean Rehabilitation Agency
	(UNKRA)
	Swedish Red Cross Hospital
	German Red Cross Hospital
	Canadian Red Cross

a permanent organization to meet regularly for the purpose. However, the simple act of getting together, with the satisfying and profitable discussions that came out of it, was immediately recognized by everyone in attendance as being highly rewarding and worthy of being continued. Accordingly, the discussion at the end of this first meeting considered the possibility of future similar meetings and, to provide a legal framework to insure their continuity, an *ad hoc* committee was appointed to draw up a draft of a constitution and bylaws and to consider some sort of a membership certificate. Also, at the conclusion of the meeting, it was agreed to meet again in one month.

The second meeting was held exactly one month later on 20 January 1952 with 36 persons attending and representing 25 separate units of EUSAK. In addition to another discussion of common problems as in the first meeting, a favorable report was presented by the committee on the possibility of forming a permanent organization. The Military Preventive Medicine Association in Korea was officially born at this meeting. A constitution and bylaws were adopted and have remained in effect, with few significant changes or amendments, since that time.

The constitution stated the purpose of the Association was twofold:

(1) To maintain the high standards of health and sanitation in all the United Nations forces serving in Korea. (This objective was successfully accomplished and, additionally, the mission was later expanded to include efforts toward improvement of health and sanitation of Korean civilians.)

(2) To assemble periodically all members to discuss preventive medicine problems of common interest. (This objective was met throughout the life of the Association.)

The charter members, in drafting the constitution, gave considerable thought to the criteria to be followed in selecting the membership, both active and honorary. Because of the transient and temporary status of many of the people who were expected to attend meetings, it was obvious that at least

two grades of membership would be required. Besides, for political reasons, it seemed important to make honorary members of certain individuals whose friendship or assistance to the Association might be valuable.

At first, it was decided that active membership would be limited to those officers actively engaged in preventive medicine work and serving with the United Nations forces in Korea and possessing at least one of the following qualifications:

A degree in public health, sanitary engineering or entomology.

A duty assignment of Corps or Division Preventive Medicine Officer or its equivalent.

These criteria were stringent and exclusive but served the purpose for more than a year when it was noted that certain enlisted men serving in the preventive medicine units were as professionally qualified as many of the officers and therefore deserved admittance to regular membership. Accordingly, after some discussion, two enlisted technicians were made active members in April 1953 and the Constitution was modified in the following meeting to legalize the action. The modification further provided that persons with equivalent officer status might be admitted if otherwise professionally qualified and if acceptable to the majority of the membership. During the four years of the Association's existence, the records show at least nine enlisted active members and many civilian members.

In the beginning, because of the nature of the fighting and supporting forces in Korea, no thought was given to the possibility of female members. However, as time passed, at least five ladies were admitted to active membership. Their qualifications were varied. One was a civilian physician in the Public Health Section of the Civil Assistance Command, one was a civilian nurse in a Korean hospital in Seoul, one was an American Army nurse, one a virologist with the Hemorrhagic Fever Commission, and the other was a nurse with the Canadian Red

Cross. Although the available records show no others, it is possible that this is not a complete list.

The first criterion chosen for selection of honorary members required that they be United Nations Medical Service officers actively engaged in preventive medicine work in the Far East Command, exclusive of Korea, or that they be United Nations Medical Service officers in Korea under whose direction preventive medicine work was being carried out. This was later expanded in May 1953 to read as follows: "Any other person who is nominated by the Membership Committee and favorably voted upon by a majority vote of the members present at any regular meeting, whose membership in the Association is considered desirable for diplomatic reasons." The records are not complete on the total number of honorary members but it is known that there were at least 45 of them. This is a minimum figure and it is possible that there were many more that were unrecorded.

The constitution provided for three standing committees which have remained in existence, with varying constituency, throughout the life of the Association—Membership, Refreshments and Program.

Considerable thought was given to the proper number of officers needed by the association. It was finally agreed, and the constitution reflects, there should be the following officers:

1. *President.* The stated duty of this officer was to preside at meetings and appoint all committees.

2. *First Vice-President.* This was an elective office throughout the life of the Association. The main stated duty was to preside over meetings in the absence of the president.

3. *Second Vice-President.* At first this office was to be filled by the Preventive Medicine Officer of the Republic of Korea Army (ROKA) and, as such, was practically an honorary position although he was supposed to function as chairman in the absence of the two senior officers. However,

most of the ROKA officers experienced difficulty in getting to the meetings because their travel was restricted by lack of funds, and for this reason the office was soon made elective and filled by other individuals.

4. *Corresponding Secretary.* The stated duty of this officer was to handle all correspondence of the Association but additionally he notified members of dates and places of meetings, sent out copies of the published minutes, and corresponded with prospective speakers.

5. *Recording Secretary.* The duty of this officer was to keep accurate records of proceedings at all meetings. This has been done capably and carefully with the result that the complete file of minutes contains a detailed history of the Association including the many items of business and professional activity discussed at all the meetings.

6. *Permanent U. S. Secretary.* The duty of this officer was to act as final custodian of records, particularly of membership, and prepare such historical data from time to time as might be desired. He was also to prepare an annual news letter and directory and keep a register of names, addresses and personal data on members. When this office was created, the founders recognized the changing pattern of membership caused by the rapid turnover of personnel rotating back to the United States and felt the need for a permanent depository in the United States to which all records could be sent and maintained perpetually. This did not work out and the office was eventually dropped. Such records as were kept were held either in the Office of Surgeon, Headquarters Eighth Army in Korea, or in the hands of loyal, enthusiastic individual members in the United States.

7. There was no treasurer provided in the staff of officers because there was no need for dues or a treasury. Later on, from time to time it was necessary to collect small contributions for special purposes (mostly entertainment and waiter tips) but there was never a fund in the organization.

This staff of officers worked rather well

for the first two years but in December 1953, it was believed that improvements could be made. Accordingly the constitution was amended to reduce the number of officers to three, which has remained in effect to date:

1. The Preventive Medicine Officer of Eighth Army was made the automatic presi-

tary in draft form within 10 days following each meeting.

At the January 1952 meeting when the Association was officially born, the Membership Committee proposed a slate of charter members of the Association together with a roster of the first 21 proposed honorary members, all of whom were accepted. A

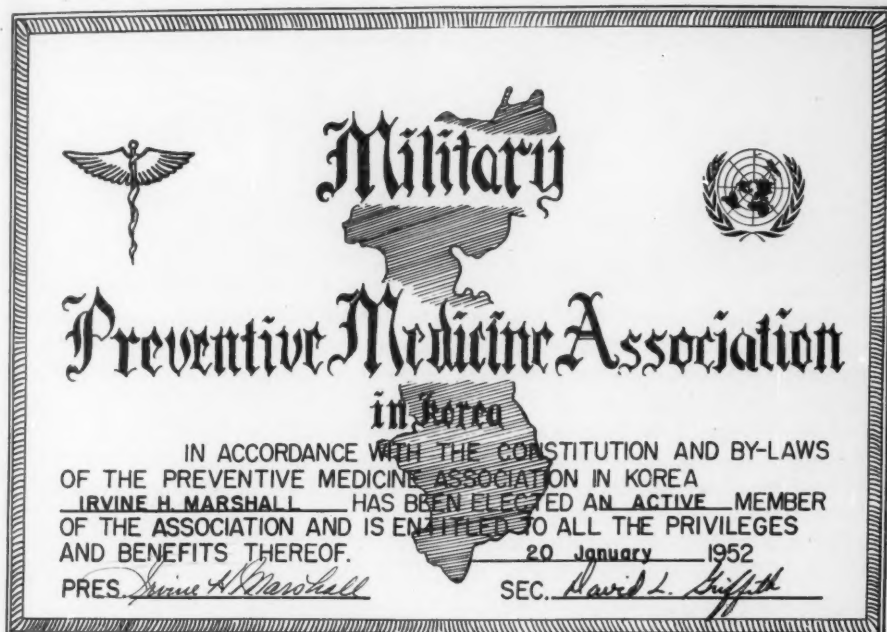


FIG. 1. Certificate of Membership.

dent with the same stated duties as before. This change assured continuity of programming, record keeping; notification of meetings, securing of speakers, etc.

2. The Secretary was designated to act in the absence of the president and also made responsible for notifying members of meetings, arranging for a meeting place, publishing the minutes in ditto form, and maintaining records of membership and other appropriate data.

3. The recorder was responsible for keeping accurate records of proceedings at all meetings and submitting same to the secre-

draft of the proposed membership certificate was approved and arrangements were made to have it printed. Subsequently, these certificates (Figure 1) were issued to all active and honorary members of the Association. Unfortunately, membership records have not been kept as carefully as the founders visualized so the total number of active members who have passed through the organization is unknown with any accuracy. However, it is known to be in excess of 500 members, most of whom are no longer in military service.

The original panel of officers elected at



the first official meeting in January 1952 is as follows:

President—Lt. Colonel Irvine H. Marshall, MC, Preventive Medicine Officer of the Eighth United States Army, Korea

First Vice-President—Major P. M. Bretland, Royal Army Medical Corps, serving with the British Commonwealth Forces

Second Vice-President—Major Ho Son Kim, MC, Preventive Medicine Officer of ROKA

Corresponding Secretary—1st Lieutenant D. L. Griffith, MSC, Health Educator, EUSAK

Recording Secretary—Captain M. R. Johnson, MC, Preventive Medicine Officer, 45th U. S. Division

Permanent U. S. Secretary—Lt. Colonel Edward C. Mulliniks, MC, Assistant Preventive Medicine Officer of EUSAK

Originally it was believed that bi-monthly meetings would be frequent enough to transact all the business of the Association, share and compare problems and solutions, and to hear and meet all the important visiting consultants to the theater. The constitution was so drawn and, although meetings became monthly almost immediately, it was not amended to require monthly meetings until a year later in May 1953.

In January 1952, the date for the third meeting was set for two months hence, in March 1952. This meeting was attended by 47 members and four new honorary members were elected. By this time, the enthusiasm of all members was apparent and the feeling was strong that meetings should be held monthly instead of bi-monthly. Nevertheless, the next meeting was scheduled for May 1952 and actually held on 14 May with 53 members attending. At this meeting it was formally decided to change to monthly meetings held on the second Wednesday of each month. This schedule has been followed ever since with two exceptions, one meeting was cancelled in September 1953 and the only other time the Association failed to

meet on schedule occurred in December 1955.

The largest all-time representation at any meeting of the Association occurred on the anniversary of the first regular monthly meeting on 13 May 1953, which a total of 69 members attended. A group photograph was taken at the end of the meeting (Figure 2), but unfortunately some of the members had already departed for their units and do not appear in the picture.

At first all meetings were held in the officers' club in the headquarters compound of EUSAK for convenience and because most of the members came from EUSAK units. Later, and for many months, meetings were held in the theater of the deluxe Chosun Hotel in Seoul until late in 1953. When the headquarters of Eighth Army moved to a new compound on the south edge of Seoul at Yongsan, the meetings moved to that location. Recently various national groups (e.g. the British Commonwealth Division) have entertained the Association by having the meetings in their areas.

Almost from the beginning, the arrangement of programs assumed a definite, regular pattern that seldom varied from month to month. Each meeting was a social occasion as well as a professional one. In addition, for many of the personnel assigned to combat or near-combat units, the monthly meetings were opportunities to escape temporarily for one or two days from the rigors of front-line existence to the relative comforts, sights and pleasures of the big city of Seoul. Each meeting lasted all day and began in the morning with an informal social hour complete with coffee prepared at first by the Headquarters Company mess and later by the food service of the Chosun Hotel.

Meetings were called to order by the president at 0930 hours at which time, rank and military formalities were laid aside, everyone assumed professional rank and proceedings were conducted in an atmosphere of informality and friendliness. It has been traditional that the first order of business consist of announcements of interest to most of the members by the staff of the surgeon





U. S. Army Photo

FIG. 2. Members in attendance at May 13, 1953 meeting at Chosun Hotel, Seoul, Korea.

of EUSAK inasmuch as this headquarters represented, and spoke for, the United Nations Command. These announcements, supplemented by senior representatives of other major commands, usually consisted of instructions, information on new policy, availability and methods of obtaining new items of supply such as insecticides and rodenticides, information about new directives being written or in publication, and a brief report on preventive medicine activities in general throughout South Korea. As each item was introduced there was full opportunity for questions (or arguments) from the floor which were carefully discussed and answered until each item was thoroughly understood and accepted by all the members. These sessions produced many lively and jovial informal discussions. No member was ever made to feel too junior to present his opinions and none was ever too senior to accept a professional opinion. Axes might have been ground elsewhere, but never here. Since one of the basic and most important justifications for the existence of the As-

sociation was to disseminate information from Headquarters to the command, this part of the program was never slighted at any time and effective use was made of it at every meeting.

The next item of regular business was one of the most interesting and profitable items on the agenda. It consisted of informal reports or comments from representatives of the various commands on current morbidity from various causes, current problems and solutions attempted or needed, and plans for the coming month. It was common during these reports for questions to be raised to which the individual was seeking an answer or a solution from the group. Since worldwide talent and experience in preventive medicine was represented at every meeting, someone often could provide a solution to almost every problem presented. At any rate, even if no answer could be found, it was enlightening and interesting to everyone to share the problems of everybody else and to learn that nearly all commands were experiencing the same difficulties.

The pattern of calling for reports from command units varied somewhat from meeting to meeting but generally went as follows:

- The three corps
- Each of the Six U. S. Army divisions
- The 1st Marine Division
- The U. S. Air Force and its units
- The British Commonwealth Division
- The U. S. Navy and its units (other than 1st Marine Division)
- The Communications Zone and its units such as:
  - The Prisoner of War Command
  - Korean Base Section
  - The Civil Assistance Command

Other major and minor units represented at the meeting.

During these informal reports from unit representatives there was never any restraint or time limit placed on the speaker. He had the right and was encouraged to take as much time as he wanted or needed. It was not unusual for his report to be interrupted by questions or comments from the floor and, either during or following his report, the discussion was brisk, interesting, satisfying and often entertaining. It was customary to allow the full morning session for reports of this kind and the discussion on them. Everyone who had anything to say or contribute was given a hearing. In spite of this lack of time-table, and with all of the comments that were generated, it was a remarkable coincidence that all reports and discussions were completed on time and there was never an occasion when this part of the agenda had to be curtailed by the moderator for lack of time. The fact that this occurred routinely amazed visiting guests who remarked about the punctuality with which the morning session closed.

The meeting resumed after lunch with a business meeting consisting of committee reports, election of any officers needed, election of new active and honorary members, and the appointment of any special committees that were felt to be necessary.

Immediately following the usually brief business meeting, the professional program began. Attempts were made to obtain out-

standing guest speakers on subjects of special interest on which they were particularly qualified to speak. A partial list of some of the guest speakers and their topics is included as Table II and indicates the caliber of the speakers and the types of subjects presented. As previously mentioned, most of the speakers were in Korea either as professional consultants to the Army Surgeon or as technical participants in the hemorrhagic fever research. A few were simply professional observers of the general medical picture in Korea. A few others were active or honorary members of the Association and regular participants in its meetings, who were invited to present a paper on their particular organizational setup or manner of doing things. From the latter type of presentation the members learned about the preventive medicine organization and activities in the British Commonwealth Forces, the U. S. Marine Corps, Navy Fleet Epidemic Disease Control Units, the Korean Civil Assistance Command in its efforts to aid and rehabilitate the civilian populace, and in various elements of our own Army forces.

After the speaker finished his formal presentation the meeting was always open for discussion and questions from the members. This plan provided opportunity for members to obtain information from many outstanding experts in various fields of preventive medicine and also to clear up or elaborate upon any points brought out in the presentations.

The average meeting adjourned about 1630 hours. Usually this marked the end of the monthly meeting and those members who had to return promptly to their units or who had a long drive ahead of them or who had to catch the evening train to Taegu and Pusan, left at that time. However, since Seoul offered many clubs which served excellent beverages and steak dinners, it was customary for most of the members to stay overnight in Seoul (which was somewhat difficult at times because of the shortage of housing) and return to their units the following day. Thus the purely social evening following the meeting was considered by many

TABLE II. OUTSTANDING PROFESSIONAL SPEAKERS AT MEETINGS

1. Captain R. W. Babione, MC, USN, COMNAVFE AND FEDCU #2 et al., "History, Purpose, Scope, Organization and Function of Fleet Epidemic Disease Control Units and G-units in the Far East" and "Navy Research and Experience in the Use and Effectiveness of Oral Penicillin Prophylaxis Tablets for VD Control."
2. Colonel J. M. Blumberg, MC, USA, CO, 406th Medical General Laboratory, "Observations in the U. S. Army Research Unit in Malaya."
3. Lt. Colonel John A. Booth, MC, USAF, "Duties and Activities of the Air Force Medical Service."
4. Major James Cater, RAAMC, 1st Commonwealth Division, "Discussion and Demonstration of British Methods of Water Testing and Treatment" and "Organization of Health Services in Commonwealth Armies."
5. Doctor Chun, ROKA, "General Picture of Major Communicable Diseases in Korea."
6. 1st Lieutenant John F. Cox, MC, USA, "Host-Parasite Relationships in Intestinal Parasitism."
7. Doctor David Davis, Johns Hopkins University, "Mouse Population Density Surveys."
8. Doctor Lloyd Florio, University of Denver, "Tuberculosis in Korea."
9. Doctor Henry S. Fuller, Harvard School of Public Health, "Epidemiological Study in Burma in 1945 on Scrub Typhus Outbreak among Chinese Troops."
10. Doctor Ross Gauld, AMSGS, "Results of Studies on Hemorrhagic Fever by Russians in Eastern Siberia" and "Recent Advances in Respiratory Disease Investigations."
11. Doctor Marshall Hertig, Gorgas Memorial Laboratory, "Phlebotomus and Leishmaniasis" and "History of Hemorrhagic Fever."
12. Doctor W. C. Jellison, Rocky Mountain Spotted Fever Laboratory, "Rickettsialpox."
13. Lt. Colonel R. M. Johnstone, Senior Specialist in Medicine, British Commonwealth General Hospital, "Malaria in Relation to World Affairs," and "Discussion of Tuberculosis, World-wide."
14. 1st Lieutenant Alfred Kneessy, MSC, 37th Prev. Med. Co., "Activities of Medical Mission to Pakistan."
15. Doctor Albert Knight, Hq. AFPE, "BCG and Tuberculosis Control in Japan and Korea."
16. Doctor Albert Knight and Lt. Colonel Frank McCreary, "Leprosy."
17. Doctor Hugh Leavell, Harvard School of Public Health, "Unity of Public Health."
18. Doctor Louis Lipovsky, University of Kansas, "Chiggers."
19. Doctor Colin McCleod, President of the Armed Forces Epidemiological Board, "Organization, Functions and History of the Armed Forces Epidemiological Board" and "Value of Gamma Globulin in the Prophylaxis of Infectious Hepatitis in Contacts."
20. Colonel G. L. Orth, MC, USA, Hq. AFPE, "Health Trends in the Army in the Far East" and "Infectious Hepatitis in the Far East."
21. Colonel J. P. Pappas, MC, USA, KCAC, "History and Organization of Public Health in Korea, Mission of KCAC and some of the Major Disease Problems in the Civilian Population."
22. Lt. Colonel P. S. Parrino, MC, USA, Hq. EUSAK, "Recent Studies in Non-gonococcal Urethritis."
23. Chaplain Samuel Scolnic, IX Corps, "Preventive Medicine and the Dietary Laws of the Jewish Religion."
24. Major G. A. Scott, Deputy Assistant Director of Health, British Commonwealth Forces, "Organization and Method of Operation of the British Army Health Service."
25. Brigadier General James S. Simmons, MC, USA (Ret.), Harvard School of Public Health, "Military Preventive Medicine."
26. Doctor E. L. Stebbins, Johns Hopkins School of Public Health, "Development of Polio Vaccine."
27. Doctor Joseph Smadel, AMSGS, "Treatment and Immunology of Scrub Typhus."
28. Captain Rosen, MC, USA, 123rd Medical Holding Company, "Military Preventive Psychiatry."
29. Captain Vernon J. Tipton, MSC, USA, 37th Prev. Med. Co., "Plague and Its Potentialities for Occurrence in the Far East" and "Insects in Korea."
30. Doctor Charles Wheeler, Hq. AFPE, "Sylvatic Plague in California."
31. Doctor Theodore Woodward, University of Maryland, "Typhoid Fever."

to be one of the most pleasant aspects of the monthly meetings of the Association.

The meetings were not lacking in levity and fun. One of the most amusing incidents

occurred in June 1953 when the Preventive Medicine Officer of the 7th U.S. Division reported a problem in his area and hopefully requested assistance from the group in solv-

ing it. The locale of the problem was the famous Porkchop Hill in the 7th Division sector. Porkchop Hill was not a large area but very strategic and, because it was on the main line of resistance in one of the areas of heaviest fighting, it had been fought over many times and had been occupied by both sides on several occasions. Since it was relatively small and had been occupied for so many months, it had become one large "closed latrine." The problem consisted of the fact that there was no space left for digging new latrines and the old ones were filling up fast. What should they do? In response to one suggestion that bucket latrines could be placed in service to be emptied in the valley at night under cover of darkness, it was pointed out that this was impossible because all parts of the hill were under direct observation and any activity such as men carrying buckets of excreta would attract enemy fire. In fact, it had been tried and the expected results happened. Somebody else suggested that the troops defecate in paper bags or ration boxes and throw them out in front of the lines. This was vetoed because it was doubtful if they could be cast far enough to do anything but magnify the odors coming from the direction of the enemy, which were already bad enough from the dead and decaying bodies lying in front of the lines which could not be reached for disposal, burial or fly or odor control. Because throwing distance seemed to be the limiting factor to this suggestion, someone else modified it to suggest that the fecal deposits be placed in special mortar shells, like psychological warfare leaflets, and fired in the direction of the enemy. This suggestion met with no warmth from the troops of the 7th Division because they immediately foresaw the gruesome results if the enemy, being if anything better supplied with that sort of ammunition, should retaliate. There was no place to run on Porkchop Hill.

The Preventive Medicine Officer of 7th Division went on to describe a suggestion made by an old experienced cavalry officer assigned to the division, and he sought advice from the membership as to its feasibility.

This cavalry officer had recalled from his memory some experiments that had been tried (successfully, he said) of placing horse manure mixed with yeast in human pit latrines. It seemed that the manure and yeast performed some obscure beneficial action in the nature of "simmering down" the fecal contents, resulting in the latrine filling up less rapidly. In the discussion that followed, it appeared that the experience of the group (being composed largely of younger officers) did not include information on the practical results to be achieved from such an admixture in the latrines but one supply-minded individual did bring up the problem of logistics. Yeast, it was thought, could be obtained but where and how was horse manure to be obtained in the neighborhood of Porkchop Hill? At this point another helpful person recalled that there *was* a horse in one of the neighboring ROKA divisions which was owned by an officer of that division. While this information successfully pointed to a possible source of supply, the question immediately arose as to whether one horse would be capable of meeting the logistical requirements of all the latrines on Porkchop Hill and, for that matter, whether the owner of the horse would even cooperate.

A good share of the discussion in many of the meetings revolved around the research being done on hemorrhagic fever. Many suggestions were made to the Research Team from time to time on new approaches to the problem and many theories were always cropping up to explain the mode of transmission of the disease, its predisposing factors, causative agents, etc. One of the consistent contributors of amusing epidemiological theories was Captain Smart, an Australian officer serving with the British Commonwealth Forces. For several months, Captain Smart had elaborated and presented further "evidence" upon his prize theory that men who drank beer seldom contracted hemorrhagic fever. The degree of non-susceptibility to the disease, according to his theory, was directly related to the amount of beer consumed. As proof of this theory,

he cited himself. However, during the meeting immediately preceding his departure from Korea, he admitted the fallacy of his theory because several of the heaviest beer drinkers in the Commonwealth Forces had recently succumbed to the disease. In fact, the startling manner and order in which the cases were observed to occur gave rise to a new theory—the cases were proceeding through the alphabet! To date, men with names beginning with B, E, I, M, N, P, R, and S had been recorded as patients. Therefore, since his faith in the prophylactic value of beer had been shattered, he was keeping his fingers crossed that he would be able to get out of Korea before the disease had progressed through the "S's" far enough to get to "Smart." He made it.

The minutes of the meeting of 11 February 1953 tell of a discussion with an amusing conclusion. The question was raised as to the medical advisability of permitting the so-called "New York Dressed Fowl" (feathers only removed) to be shipped to Korea for consumption in the field ration. After some discussion, the members came to the conclusion that there were two choices open to them: take it or leave it. They decided to yield to the inevitable, "Inasmuch as that is what we are receiving over here, it was finally decided that it might as well be accepted, provided, of course, that it is properly used."

In June of 1953, the Association was treated to an extremely interesting account of an epidemiological study of an outbreak of scrub typhus among Chinese troops in Burma in 1945. In addition to the lessons in practical epidemiology learned from the paper, some amusing bits of incidental information were derived from an account of a trial of the effectiveness of individual two-ounce bottles of dimethyl phthalate insect repellent in preventing the disease in Chinese soldiers. It was learned that:

1. If a man (i.e. a Chinese soldier) drank a full bottle of the stuff, it did not kill him.
2. If he had ascariasis, the repellent was an excellent ascaricide and would cause all his worms to be eliminated.

3. If a short piece of string were inserted in the neck of the bottle of repellent, and lighted, it made an excellent candle.

4. The repellent had very little, if any, observable effect on the prevention of scrub typhus in Chinese soldiers.

One of the best indications and measures of success of the Association in serving its members comes from an analysis of the wide range and scope of topics discussed at the regular meetings. These topics are briefly summarized in a separate tabulation (Table III), revealing that the discussions really did "run the gamut" of almost every aspect of preventive medicine. It is interesting to note that most of these topics reappeared in the discussions many times. This can be explained by the fact that the problems were more or less constant in Korea, that is they were never completely solved at any time, and the rotation policy in the theater constantly changed the active membership. Thus newcomers to the theater were being faced with much the same problems that had worried their predecessors. Outstanding among these recurring problems were the condition and operation of sanitary fills, the control of prostitution and venereal disease, physical examination of Korean food handlers in Army messes, the utilization of native foods and restaurants, aerial spraying of insecticides versus ground control, the necessity for the high (5 ppm) chlorine residual in the drinking water, the necessity for so many and so frequent immunizations, the problem of miticide treatment of clothing, and rabies.

Another indication and proof of the success of the Association in serving its members in a professional way came from the many commendations from its members and guests on the occasion of their departure from Korea. Doctor John R. Paul, Epidemiologist from the School of Public Health of Yale University was a regular and enthusiastic supporter of the Association during his stay in Korea and was kind enough to say on his departure that "attendance at these meetings has been a refresher course in preventive medicine to me." Perhaps the feel-



TABLE III. TOPICS AND PROBLEMS DISCUSSED AT MEETINGS

1. Organization of the Association—constitution, by-laws, elections of officers, membership qualifications, honorary members, and certificates.
2. Aerial spraying of insecticides—service responsibility, how requested and coordinated, type of aircraft available, difficulty of locating targets, priority of targets, value of aerial control versus ground control measures, measurements of effectiveness, damage to silkworm culture, effects on bee culture, rationing of insecticides, use of helicopter.
3. Cold weather injuries—over-diagnosis of cases, evacuation policy, protection and handling of "CWI sensitives," reports of the Cold Injury Team, meteorological and bio-climatological aspects of cold weather operations and injuries, clothing design and distribution, vapor barrier suits, foot care and inspections, rubber combat boots, prevention in truck drivers and train passengers.
4. Heat injuries—morbidity and control measures.
5. Hemorrhagic fever—clearing bivouac areas, rodent control, data on fauna of Korea (snails, snakes, leeches, rodents, mites, ticks, and other arthropods), mite control, mite repellents (disadvantages—oiliness, solubility of plastics), miticide impregnation of uniforms (methods, agents, allowances, procedures, precautions, influence of ironing and starching, testing strength of miticide solutions), chigger culturing, morbidity in Koreans, and research.
6. Insect and rodent control—allowances of insecticides and rodenticides, insecticide resistance, louse control by dusting with Lindane, experiments in control measures, control of fly breeding in corpses in front of lines, insecticide spraying and fogging equipment, fly control tests with parathion, field testing of small aerosol hand sprayers, fly count studies on standard grills, bedbug infestations, quarters infestation with soft-body ticks, fire marshal prohibition against spraying wooden buildings with DDT in oil, thrips in sleeping bags, lice in civilian prisons, lousiness of prisoners of war, improvised mouse and rat traps, precautions and methods of use of warfarin, human warfarin poisoning, and rat breeding in sanitary fills.
7. Medical intelligence—captured enemy materiel (identification, circumstances of capture, location, collecting agency, date), disposition of materiel, enemy preventive medicine and sanitation programs, morbidity in enemy troops, formation of medical intelligence teams.
8. Immunizations—types and frequency, necessity for semi-annual smallpox vaccination, field test of lyophilized smallpox vaccine, civilian tuberculosis control with BCG vaccine, immunization of civilian adults and children, vaccination of dogs for rabies, one-dose versus three-dose rabies vaccine.
9. Venereal disease—morbidity, question of sources of cases—Korea or during "R & R" in Japan, penicillin oral prophylaxis, nearsphenamine sold locally in Korea as a prophylactic, morbidity in Korean civilian and military populations, proper curative dosages of penicillin for gonorrhea and syphilis, VD contact reports, activity of prostitutes, diagnostic problems concerning chancroid in the female, objection of Korean prostitutes to sulfa drugs, problems of providing treatment for infected native females, effect of punitive measures on rates in troops, possible correlation between length of stay in Korea and the incidence of VD.
10. Laboratory services available in Korea—bacteriological analyses, rabies diagnostic service.
11. Field sanitation—garbage pits, sanitary fills, latrines, messes, snack bars, barber shops, straddle trenches for Korean personnel, cool boxes for storage of meat, food poisoning outbreaks, disposal of garbage and trash to Korean civilians, field sanitary devices, discrepancy between authorizations and requirements for disinfecting mess gear.
12. Water purification—discipline, inadequate chlorination technics, necessity for high chlorine residual, water trailer shortages, necessity for bacteriological tests, necessity for coagulation, shortage of chlorine residual comparators, new type comparators designed in Japan and distributed to Korea, interpretation of results of bacteriological analyses of water, Korean ice used in drinks, standards for ice manufacture and handling, oil contamination of water supplies, Koreans poisoning fish upstream from water points, necessity for chlorinating shower water, water plant operators school for Korean civilians, surveys of Korean municipal water supply systems.
13. Diseases—malaria (incidence in Koreans and in stateside returnees, chloroquine suppression, primaquine therapy for rotates, relative value of chloroquine and paludrine); intestinal parasites (no schistosomiasis in Korea but clonorchiasis and paragonimiasis); smallpox—endemic in Korea, cases in UN troops, confusion by Korean physicians with chickenpox; infectious hepatitis—possible relation to water supply; typhus fever—epidemic louse-borne in civilian population; Japanese B encephalitis—epidemic in civilian population; relapsing fever—epidemic in civilian population; influenza—importance of consecutive blood samples; microfilaria in civilian population; leprosy; tuberculosis; poliomyelitis;



TABLE III—(Continued)

- scrub typhus; urinary acariasis; health problems resulting from the marriage of soldiers to Korean girls and living off-post; rabies.
14. Food sources and food handlers—purchase of Korean fresh fruits and vegetables and proper methods of processing them for consumption; on-limits restaurants in Korea; examination of Korean food handlers—need for chest X-rays and stool specimens, serology, special precautions, incidence of intestinal parasitism, low incidence of amebiasis, helminth surveys of ROKA and ROK civilians, need for deworming food handlers, deworming of ROKA troops, X-rays of KATUSA personnel.
  15. Swimming areas—leeches (hazards, prevalence, how to remove), land mines, non-existence of schistosomiasis, instructions on sanitary inspections, approval and control of swimming areas.
  16. Training—indoctrinating new medical service officers, new publications of interest to PM personnel, Preventive Medicine Handbook specific for Korea, CBR warfare instruction for PM personnel, for unit insect and rodent control teams, food handlers courses.
  17. Medical assistance to Korea—agencies involved: Armed Forces Aid to Korea (AFAK), United Nations Civil Assistance Command (UNCACK), Korean Civil Assistance Command (KCAC)—successor to UNCACK, United Nations Rehabilitation Agency (UNKRA), etc., and the work of each; U. S. Army participation in instruction in Korean medical schools, plans for a tuberculosis hospital in Korea, assistance in control of epidemics, assistance in re-establishing natives above the "Farm line," nutritional surveys, surveys of nutritional deficiencies.
  18. Mental disease—preventive psychiatry, psychiatric admission rates and possible causes (e.g. relation to length of stay in Korea).
  19. Miscellaneous problems—protective vests and other body armor; medical records and statistics; medical reports; central control activity for assembling entomological data on Korea; common Korean snakes; lead poisoning from fumes from stoves burning leaded gasoline; deployment of preventive medicine units; weapons for preventive medicine personnel; problems in repatriation of prisoners of war; housing standards for Korean housing for American occupancy; guerrilla activity; industrial medicine and industrial safety at air bases; preventive medicine units in ROKA; methyl alcohol poisoning in ROKA and KSC—causes, sources and treatment; and articles for publication.

ings of most of the past members are best expressed in the letter received by the president of the Association from Lt. Colonel Derek G. Levis, OBE, MB, RAMC, Deputy Assistant Director of Army Health, British Commonwealth Forces in Korea, who had been most helpful and enthusiastic during his long membership in the Association. His letter is quoted in full:

#### BRITISH COMMONWEALTH FORCES

##### HEADQUARTERS

British Commonwealth Forces Korea,  
British Army Post Office No. 5

4 Nov. 53

Dear Colonel,

I am just about to depart for a new assignment in Singapore, and this letter must, to my regret, take the place of a personal farewell to the Preventive Medicine Society. I was prevented by circumstances from attending the meeting on 4 November.

I should like you to inform the members of the Society how much I have enjoyed the association

and how greatly I have profited from the meetings. I feel such meetings were always good for the souls of us Preventive Medicine Officers as well as for the bodies of those whom we strove to keep well in spite of themselves. It may be of interest to the Society to know that I have forwarded my Membership Parchment for inclusion in the Munitment Section at the Royal Army Medical College in London. In the far future when Korea has become a matter of military history and another campaign for study, such an exhibit will serve to remind a rising generation of service doctors that Preventive Medicine remains the foundation of service medicine, and that it was carried out in KOREA in the true spirit of the Charter of the United Nations.

Beneath all the apparent levity and leg-pulling at our meetings ran the perpetual search for the betterment and the maintenance of the health of the soldiers in the field, and future students of the Campaign will appreciate that regular dividends in improved health were paid as a result of the activities of the Preventive Medicine Association in KOREA. Thank you for allowing me to belong to it.

Yours sincerely,

/s/ Derek G. Lewis

In the beginning of the Association in December 1951, the founders profoundly believed that teamwork by all the preventive medicine physicians and para-medical assistants was essential to successful achievement of common goals in field preventive medicine. Since almost every problem that arose could only be solved by the combined experience of the various specialties represented at the meetings, there was never any question during the first two years of the existence of the Association but that meetings should be conducted as combined operations, with each member given an equal voice, regardless of age, experience, professional training, official position or duty, nationality or anything else. Unfortunately, and to the partial detriment of the Association, this spirit of teamwork did not last forever. For various reasons, none of which were valid or sensible, it became the custom more and more frequently to separate the meetings into professional groups for the professional part of the meeting. This resulted in the preventive medicine officers (physicians) assembling in one room to discuss one paper or list of topics, while the sanitary engineers, entomologists and other professional fields were shunted into another room to discuss things thought to be more "in their line" and therefore more meaningful to them. This practice not only denied the lessons to be learned to some of the members (who wanted to attend both discussions but could not) but tended to destroy the very basis for successful practice of field preventive medicine by removing the camaraderie and spirit of cooperation and teamwork among all the professional specialties toward the solution of problems confronting them.

There can be no question of the fact that the Military Preventive Medicine Association in Korea has served a very real and useful purpose during its more than four years of existence. Few persons who ever contacted the organization in one or more of its meetings, either as active or honorary member or guest, came away without some useful addition to their knowledge. In fact, it can be

said that everyone who had any experience with the Association was very enthusiastic about it. During its four years of life, the Association promoted smoother operations between the various nationalities and commands engaged in public health activities throughout Korea, coordinated their efforts, provided them with information and assistance, served as a refresher course in preventive medicine for some, a course in preventive medicine for others, and training in practical public health activity for everyone.

Korea was ideal for an organization of this kind because of the nationalities engaged in the conflict, the area covered, the dispersal of public health workers, the magnitude and complexity of sanitation and disease problems and the difficulties of communication by any other means. The success of the organization in Korea warrants a strong recommendation to preventive medicine officers in event of future conflicts to consider a similar device for expediting solution of problems, disseminating instructions and information, improving public health and sanitation activities and coordinating the efforts and activities of all the various international groups working in the theater.

#### SUMMARY

A brief history of the Military Preventive Medicine Association in Korea from its inception in December 1951 to the present date has been presented. It is not a complete history because of the obvious space limitations in a professional journal; however, it attempts to show the purpose for which the organization was conceived and how successfully it met those original goals. Since it was the first and only organization of its particular kind in any military operation, its outstanding success deserves to be documented for the guidance of preventive medicine officers in any future conflict.

#### REFERENCES

<sup>1</sup> Minutes of monthly meetings of Preventive Medicine Association in Korea from December 1951 through November 1955.

<sup>2</sup> Personal records of the authors.

## Reactivation of a Veteran Medical Group

By

COLONEL HOMAN E. LEECH, MC, U. S. Army\*

THE information that follows is, in many respects, a sequel to an article published by Kintz et al. in 1950<sup>1</sup> which described the operations of medical groups of the First U. S. Army in the European Campaign. The strongest link between that report and this is that the 68th Medical Group plays the major role in each instance. There has not been much written concerning the operations of medical groups, and what has been published deals to a great extent with operations in a combat zone.<sup>2</sup> Examples are thus plentiful which add glamour and excitement to the operations being described. Since this report is a description of the growth of a newly reactivated unit, there is not the overtone of glamour which accompanies reporting battlefield operations, but there is an undertone of excitement, at least there was for the personnel activating the Group, which goes with getting a new unit off to a good start.

To officers of the medical service with command and staff responsibilities, the utilization of medical groups is an interesting and somewhat controversial problem. The purpose of presenting the following information is to show how one group headquarters met the initial problems of activation and the recurring problems of operation for one year as an integral part of the Army General Reserve, and in so doing, record data that may assist planners in the future.

On 27 July 1954, the 68th Medical Group was activated, assigned to Second Army, and attached to Headquarters, Fort George G. Meade, Maryland with station at Fort Meade. It is important to note that the Group was attached to a post, because certain problems which will be discussed below resulted from this arrangement. Primarily, the Group was

activated to furnish a parent organization to provide technical, operational, and administrative command of the separate medical units which were located at Fort George G. Meade, Maryland. These units were part of the Army General Reserve and were all of the general reserve medical units assigned to Second Army. This geographical factor facilitated the performance of the Group's mission. The attached units consisted initially of two evacuation hospitals, two surgical hospitals, one ambulance company, one dental detachment, and one supply detachment. After the Group had been in operation about two months a preventive medicine company and two preventive medicine detachments were attached also.

In general, the "growing pains" of Headquarters and Headquarters Detachment, 68th Medical Group, were similar to those of all newly activated units. A unit learns a lot "by pulling itself up by its boot-straps," but the operational effectiveness of such a unit is delayed. This truism is illustrated by the fact that the Group had one officer and one non-commissioned officer present for duty at the time of activation, and nineteen days later all the units mentioned above were attached, with the exception of the preventive medicine units. It was not until five months later that all key commissioned and non-commissioned officers who were assigned finally joined the unit.

The attachment of these units meant the imposition of a tremendous administrative load upon Group headquarters, for the T/O&E of such a headquarters does not allow for the administrative duties which befall a unit of this type operating in the continental United States. The Post Commander, and rightly so, directed that all matters pertaining to the attached units be channeled through Group headquarters while in garrison. The best solution to this problem was

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obvious, and was the one decided upon by the Group commander, i.e., to bring people from attached units to headquarters on temporary duty until permanently assigned personnel arrived. The attached units were screened, and the best qualified personnel available were brought into Group headquarters—the only modifying factor being that by such an action the operation of the attached unit must not be hampered or morale affected. It was felt that such a procedure was essential so that Group headquarters could assume the leading role in the least possible time, for there was some confusion in the minds of the commanders of the attached units as to what part Group was to play in the scheme of things. The Post Commander was extremely helpful at this time by giving full support and prestige to Group headquarters.

Since at the start there was a question in the minds of the subordinate unit commanders as to the part a Group headquarters was to play in the operation of things, this seems a proper time to describe the reaction of the unit commanders to the activation of Group headquarters. Actually, this survey was made after the Group had been in operation for about ten months. In evaluating these comments one should bear in mind that these subordinate units had been accustomed to shifting for themselves as far as administrative and logistical matters were concerned. There was unanimity of opinion that with the advent of Group the status of each subordinate unit in the military community was enhanced—more attention was given to their requests and requisitions and recognition was more readily obtained for jobs well done in post activities. The unit commanders making these reports felt that the improvement was noticeable almost at once after Group headquarters was activated. All this reacted favorably throughout the Group in that all units felt that they "belonged" and that there was now a senior headquarters which was interested in their welfare and progress. Along with this feeling of "belonging" and its comfortable reaction, there was

also a sense of resistance brought about by the realization that a "free-hand" could no longer be played in most situations. Each officer reporting on this relationship, however, realized that tight control by the higher headquarters was necessary and felt the advantages to be gained far outweighed the disadvantages.

The two main complaints from unit commanders were (1) there was an increase in paper work and (2) there was a slowness in obtaining supplies. The increase in paper work resulted from the fact that official correspondence had to come through Group headquarters, and thus it was necessary for units to reply by indorsement in order that Headquarters obtain appropriate information. For a while certain units did not meet Headquarters' standards as far as military correspondence was concerned, and so at times correspondence had to be returned for correction. The comment relating to supplies will be explained below. It is sufficient to say here that the establishment of a consolidated supply set-up made it necessary that all requisitions go through the consolidated supply section. Such a plan precluded individual unit commanders or their staffs from making special arrangements with the various supply sources at post level. Naturally this slowed down action in certain cases.

Soon after activation it became apparent that as Group fitted into post operations its functions were going to be those of a regiment as far as administration was concerned. For example, all enlisted personnel were assigned to Group and were then reassigned to attached units. The T/O&E of a group does not allow for such an administrative load; a sergeant major, plus one clerk and a personnel sergeant, could not handle the load. Therefore, the personnel sergeant was given a non-commissioned officer and two clerks, and the sergeant major was given two clerks—this augmentation worked satisfactorily.

It soon became apparent that if Group were to handle the assignment of all enlisted personnel, close supervision of the personnel

sections of the attached units was mandatory. Two plans were considered. One was to closely supervise unit activities in each subordinate headquarters; a plan which would require additional personnel in Group headquarters. The second plan was to consolidate the various personnel sections in Group headquarters. The second plan was adopted. It was the better way to obtain essential data quickly. It allowed for supervision by a minimum number of personnel and it afforded the best means of establishing uniform procedures. These factors were important from the training viewpoint, too, for responsible soldiers from the various units were rotated in the supervisory jobs. Unit integrity of each section, however, was maintained so that when a unit moved to the field or left Group for any reason, its personnel section was ready to go at any time.

At the time of activation, higher headquarters let it be known that every reasonable step should be taken to maintain unit integrity of the general reserve units. Group headquarters practiced what it preached in this regard not only as far as its relation with its own subordinate units was concerned, but also insisted that other post facilities not encroach on Group's or its subordinate units' prerogatives in this regard. This is a most important policy if an outfit is to be self-reliant. There is nothing more deadly than to have men and resources "on paper" and then not have them available for duty. There were, of course, many post activities which called for levies from the 68th Medical Group, but Group decided which men should go, and when details were prolonged necessary arrangements were made to rotate personnel so that no one was absent from his unit for too long a time.

Because of the early heavy administrative load and shortage of personnel, Group headquarters did not start its Army Training Program for six weeks, and when it did begin the initial phase was advanced individual training. Training then proceeded through consecutive prescribed phases until it reached the post cycle phrase. During this

time all personnel in Headquarters Detachment attended classes with the exception of experienced non-commissioned officers. These men were utilized as instructors, supervisors, and in on-the-job training. Soldiers with experience should not be subjected to repetitious basic training—at least, not as a student. Every effort was made to use these men in a supervisory capacity so that they would realize that they were essential to the mission of the general reserve. Too often men in this category have been allowed to get in a rut, and in so doing have lost self-respect and interest in their jobs. Training is a tedious task at times, and even alert aggressive men have become worn down by the repetition. Therefore, much planning and effort must be exerted by responsible officers to see that duty is made interesting, and to see that men are given change of assignment so that they can gain a fresh perspective of the training problems in general reserve units. It is worth noting that satisfaction in a job has some bearing on whether or not a soldier re-enlists. Sixty-three enlisted men in grades E-5, E-6, and E-7, serving with the 68th Medical Group during the period 27 July 1954 to 27 July 1955, became eligible for separation from the service. Of this number only twenty-two elected to re-enlist to fill their own vacancy. The remaining forty-one were separated!

Since training was the primary mission of Group and its attached units, much time was spent and effort expended to arrange a satisfactory training program. Everyone who has been assigned to a training unit knows of the every day problems—temporary duty, post details, guard, kitchen police, too great an overhead resulting in small classes, turnover of personnel—so there is no need to mention further these common harassments. For the most part, training was decentralized and each unit prepared its own training program and followed it after approval by Group. In the belief that all medical service soldiers should have a basic knowledge of military medicine, a test was given by the Group S-3 Section to 457 enlisted men and of these,



sixty-one failed to pass. Instructors were chosen from various attached units and Group S-3 Section established a special school of six weeks' duration in an effort to raise the proficiency of those who had failed the test. Forty-three students were finally enrolled and when reexamined thirty-three made a passing grade. The results of these examinations showed that there was a need for basic training in military medicine. Qualified personnel would be needed to conduct and supervise such training.

There were no medical officers in Group until the Group Commander was assigned. There were no nurses, but there were three dental officers assigned to the evacuation hospitals. These latter were not with their units for any appreciable time for, to comply with current directives, eighty per cent of their time had to be spent doing clinical work in the post facilities. Certain of the units had been participating in on-the-job training at the local post hospital, but only the men who had had at least basic training were in the program. Higher headquarters gave ear to a request of the Group Commander for professional help by having two nurses assigned to one of the evacuation hospitals. These women were placed on indefinite temporary duty with the S-3 Section of the Group headquarters, and there they planned, supervised, and taught classes in the technical subjects. It was expected that the nurses would supervise classes given by individual units, and be more or less consultants to the various unit commanders—in theory this sounded like a good system, but it did not work out this way. This failure may have been due to two factors: (1) the unit commanders were not well enough acquainted with the technical phase of the operation of a hospital or, (2) there was some degree of professional jealousy. At any rate, Group took over responsibility of training and testing soldiers from all the units as far as military medicine was concerned. This was done in spite of the almost fanatical preaching about unit integrity!

All recruits assigned to Group were

tested as soon as possible for their knowledge in basic medical subjects. Most of these men had been "exposed" to these subjects, but had had no practical application. These men were assigned to special classes under supervision and teaching of the nurses and their enlisted assistants, and in most cases finished the classes with enough knowledge to adequately function as medical soldiers. It was an unending process, though, because of the constant turnover of personnel. It is interesting to note that the degree of aptitude in medical training depends on a common denominator which is present to varying degrees in many of life's situations. Motivation is that common denominator. For example, some of the poorest showings in the initial examinations were made by college graduates—thus a great need for leadership existed. Many of the instructors had the necessary qualities of leadership and therefore, a reasonable number of the poorly motivated personnel did show improvement.

Prior to the attachment of the various units to the Group, certain aggressive unit commanders had worked out arrangements for on-the-job training in the local Army hospital. The units participating were the larger ones. They had plenty of personnel and therefore could perform all the necessary garrison duties and still have men available for on-the-job training. The smaller units were hard-pressed to release enough men to the local hospital to make an on-the-job training program feasible. The inequity of this was apparent to the Group staff, and a policy was established that on-the-job training would be arranged and coordinated by Group. In this way all the attached units had an equal opportunity to participate in the practical phase of technical training. The Group Commander and the Hospital Commander agreed on the number of men who could be placed in the program, and then these soldiers were given on-the-job training for ninety days. At the end of that time another class was rotated into the program. This system had the advantage



of maintaining unit integrity, because the men were rotated by unit and because the ninety-day plan minimized the likelihood of a soldier finding a good job and getting so "dug in" that he became lost to his parent unit. During the time covered by this report the plan worked to the satisfaction of the local hospital commander and the Group Commander, for in addition to the arrangements which protected Group's interests it was agreed that the men working in the hospital would be absent from training only for guard duty and to participate in what was called maximum effort ceremonies (parades, etc.) at post. This allowed the Hospital Commander to plan on a definite number of personnel who would be working in the wards and clinics. The program was coordinated at the working level by a liaison non-commissioned officer from Group who was on duty in the chief nurse's office of the local Army hospital and the nurses from Group who had overall supervision.

During a year's time, which is the approximate period covered in this history, Group was given various training and operational missions. The term "training mission" is used for a situation in which no actual care of patients had to be provided. Training missions usually consisted of setting up a complete hospital for demonstration purposes. Such a mission was assigned to Group on the average of once a month. Operational missions involved either whole units or provisional units which were smaller than the parent organization, such as provisional clearing companies or dispensaries. These missions were in support of Army-wide field tests of alert plans and support at summer training sites. Physicians had to be assigned to these units for the duration of mission, since none of the attached outfits had a professional complement with the exception of the two nurses mentioned above. These women again proved their worth for they participated in certain of the operational missions by caring for actual casualties.

Normally the S-4 Section of a Group

headquarters has a mission which is supervisory and advisory. However, since this unit was in garrison, post headquarters directed that Group establish an organizational supply set-up at Group level. The authority to establish such an operation was in SR 735-30-1, dated 23 August 1954, and DA letter AGC-C(M) 140.2 (14 September 54) Compt AP, subject: "Transfer of Memorandum Receipt Account to Station and Company Books," 20 September 1954, and 1st indorsement thereto from Headquarters Second Army, AIACO-AD 140, 12 October 1954, and letter, Headquarters, Fort George G. Meade, Maryland, AIDMB-D 400, dated 12 November 1954, subject: "Establishment of an Organizational Supply." Several conferences were held with post personnel explaining that such a mission was foreign to the planned operation of a Group headquarters. Special emphasis was placed on the lack of personnel. All discussion was to no avail and so Group had two alternatives: (1) to place necessary personnel on temporary duty with Group from attached units to run such an operation, or (2) give the mission to the attached medical detachment (supply) T/O&E 8-500R as an operational mission. The latter plan was adopted, and worked well because it gave a unit a mission not dissimilar to its primary mission. The point to remember, however, is that if there were not a supply detachment in Group it would have been necessary to call on units for personnel to staff the Group level supply organization. Here again Group was saddled with responsibilities expected of a regiment, but had none of the advantages inherent in regimental organization.

In conclusion, let it be said that the decision to activate Headquarters and Headquarters Detachment, 68th Medical Group, was sound. The capabilities of such an organization during peacetime and in the continental United States are as varied as they were shown to be in combat. Again, what is the mission of a Group headquarters? The answer is to provide technical, operational,

and administrative command of attached separate medical units. The preceding paragraphs describe the 68th's efforts in this regard. It is believed that Group demonstrated its capabilities by developing an organization which, on one hand, dealt satisfactorily as a major subordinate command at Fort George G. Meade, Maryland and, at the same time, operated successfully as

the higher headquarters for various separate medical units.

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U. S. Army Photo

Captains Mary J. and Mildred A. McCally, Army Nurse Corps, study an atlas to find out more about the country (Korea) to which they have been assigned for duty. They have just finished the Army Medical Service School's 27-week course in advance nursing administration. These two sisters have served together for the past twelve years in the Army Nurse Corps.

## Some Thoughts on Military Medical Careers

By

MAJOR BEDFORD H. BERREY, MC, U. S. Army\*

RECENTLY much has been written and verbalized concerning the mass exodus of Medical Corps officers from the Regular Army. Very little has been offered, by or for those in question, which is practical or acceptable to the Department of the Army, the Army Medical Service, the officers concerned or the Congress. Perusal of recent publications lends the impression that little grass root efforts have been expended to determine the "whys" of the exodus. An undoubted exception has been to discuss the situation with and to study career problems using senior officers' expressions as a basis for formulating opinion and policy. Perhaps emphasis should be directed to tactical units, dispensaries, detachments, headquarters groups, station and field hospitals, as well as Class I and Class II hospitals in the United States. Personal contact with all medical officers is expensive but paramount to understanding and determining common needs.

Recently published Department of Defense proposals to improve career attractiveness for medical officers represents forward progress. Apparently without sufficient analysis a solution is considered based, almost entirely, on the power of the dollar. It is doubtful that therein lies the answer for attracting physicians to or retaining physicians in service. Proposed pay increments in the form of a bonus are not sufficiently large to equilibrate the income of Army physicians with civilians of comparable professional or administrative abilities.

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The opinions herein recorded do not necessarily reflect those of the Department of the Army or Department of Defense.

It is necessary to develop new concepts, depart from tradition and establish a new set of values for that which is honestly and sincerely desired.

Financial gain in military service cannot be seriously considered the sole remedy for stemming the exodus or for raising the attractiveness of military medical service. If this were true, few Medical officers would remain in service. Practically all can realize more income, without typical service inconveniences in civilian endeavors, either private or group practice or in a civilian medical administrative capacity. What factors influence physicians to remain in service?

Many two-year physicians will say—"because the 'old so and so' can't make a living as a civilian." To this, one must look at the record of medical achievement, both personal and military, during peace and war, in public health measures, in patient care and treatment, in economically operated hospitals and dispensaries and in their achievements in civilian life following termination of their military careers. Such a statement appears obviously prejudicial. It is admitted that some Army Medical officers, both Regular and Reserve, are not the best, just as varying qualities are observed among civilian physicians. However, the individual level of professional training among military physicians has never been higher.

That the military career is a way of life constituting a definite philosophy is recognized and accepted by physicians, engineers, lawyers, West Point graduates and others. The satisfaction of serving one's country, working with certain age groups, teaching, developing, supervising and leading people presents opportunities more available in the military than elsewhere. To do a job well while recognizing its value and place in the military structure is as refreshing and re-

warding to military physicians as research or teaching is to those so engaged in civilian life who generally receive similar compensations. The opportunities for obtaining outstanding clinical material and clinical achievement in military medicine are limited only by the officers' ability and interest. To feel one should be offered everything in return for little or nothing fortunately still remains a foreign concept to many Americans.

Of those currently leaving the service, or lacking contentment therein, many were born and developed in an era of social welfare nurturing the concept "all take and no give." A lack of adult maturity is evident as is the lack of desire to participate in a program devoted to fostering the cause of freedom; such a program appears unable to satisfy the materialistic "demands" required by these individuals. Correction of certain inequities by administrative and Congressional action will serve to retain the required "hard core" and develop its potential. Such corrective action will be productive of the desired results and would appear to have possibilities for gaining and retaining physicians for the service.

An analysis of the recent Department of Defense proposals is necessary prior to offering counter proposals, gained by interviewing several hundred medical officers during the summers of 1953 and 1954. These officers were stationed in 18 Class I hospitals in the United States and in medical treatment facilities in Germany, Austria and France, including isolated dispensaries and medical detachments.

First, how can a Regular officer serving without contract receive a bonus to do that which he indicated he desires? This materially detracts from the traditionally cherished concept of Regular Medical officers and their place in the military structure, placing false values on the career. Bonus contracts appear analogous to dispelling the Regular Corps in favour of contract surgeons, previously proven unsatisfactory.

Second, the luxury of an increase in initial appointment grade in the Regular Army

is a charitable thought but is it equitable? Already the Army Medical Service rosters are filled with youthful rank. What happens to those now in service in the lower grades and can they be equitably treated? In previous integrations, to which these Department of Defense suggestions sound strangely analogous, many officers were, in effect, lowered on the promotion list in favor of those with more professional but less military experience. A balance is necessary, but not at the sacrifice of military knowledge and experience! Proponents seem to insist that medicine is medicine regardless of where practiced. The thought that the Army Medical Service must have physicians "at any cost" appears prevalent. The need cannot be denied. The "any cost" feeling must be carefully integrated with justice to the loyal officers who have remained in service.

Starting all medical officers on active duty as Captains creates a situation reminiscent of 1950-51-52 policies when 1 year 1st Lieutenants with 1 year's service become Captains to the consternation of other branches, delaying their promotions while using Army-wide grade allowances. All of these medical 1st Lieutenants were not qualified to be Captains—how *now* can a youngster out of medical school with little or no military or professional training be better qualified for the initial grade of Captain? Such a proposal tends to overlook those officers who have spent years working and waiting for slow promotions. Will these officers be justly compensated? Integration and elevation in grade must be considered equitably for those now in service.

Third, noting the proposed increase in longevity pay, many Lt. Colonels, Majors, Captains and some Lieutenants were constituents of medical ASTP 1942-46, or had wartime active duty service with other branches and receive corresponding pay credit. To offer longevity credit for years spent in pre-medical college years in addition to establishing and readjusting basic date of rank as that date when medical school was entered would be a more positive ap-

proach indicative of sincere interest on the part of those responsible for formulating legislative proposals.

Fourth, the educational subsidy proposal lacks positive attractiveness for those with completed professional training and who are qualified for or are certified by a specialty board. However, if coupled with an educational program starting in medical school offering a medical education, internship and residency training for a minimum of 15 years' service after completion of resident training or 10 years after internship the educational subsidy definitely has merit. Previous training programs have not required a sufficiently long service commitment to produce stabilized personnel.

Fifth, professional meeting attendance sounds attractive but at times is incapable of implementation because:

a. Local funds for this purpose are lacking.

b. Professional level of training required by the Surgeon General's Office for attendance at some meetings frequently excludes deserving physicians.

c. Parsimonious per diem rate for national conventions is insufficient to enable one to properly represent himself and the U. S. Army Medical Service.

d. Unit "can't spare the officer," the commanding officer or service chief's excuse because someone might be overworked.

e. Inequality in attendance; a few seem to be able to attend the majority of meetings while many eligible physicians are denied.

Is money, as current top level thought would indicate, the *only* answer to securing a competent, stable Medical Corps? It is no more unequivocally true than the thought that foreign good will can be purchased. This latter concept has been disproven, is outmoded and discarded in favor of deeds.

The following proposals attempt to counteract money's omnipotent allure to secure and retain those qualified for a military career.

1. Separate Medical Corps promotions, so no relationship, actual or implied, exists be-

tween it and the Army list. By legislation authorize the Surgeon General to promote qualified officers to fill existing vacancies before offering an apparent prize (increased grade appointment) to attract the unknowing and unknown. Vacancies must exist as revealed by the numbers who have resigned the last 12-18 months.

Schedule, announce and maintain regular uninterrupted temporary and permanent promotions, originating with authority vested in the Surgeon General by the Congress based on separate grade percentage allowances for the Medical Corps. Establish promotion realism—based entirely on ability and merit determined, not alone by the rating officer, but by a minimum of three senior officers quarterly. Eliminate time in grade as the controlling factor and insist on higher selectivity by selection boards.

2. Rigid criteria must accompany No. 1 specifying definite release without recourse, after two passovers; both reconsiderations to occur within 12 months following maximum time in grade. Basing promotions to Lt. Colonel and Colonel on a "best qualified" basis enhances prestige enabling specified goals more readily achievable. Today inept officers are content to bask in the "time in grade" clause, doing *only* the minimum required and feeling secure that promotions will come as readily as if they worked hard. No mechanics exist at present to separate, on any given recommended list, the best qualified officers from those barely qualified, offering no recognition to the deserving.

3. Maintain definite contracts allowing retirement after 20 years of service regardless of existing conditions; promote and encourage early retirements. Such a concept strengthens the Regular Service by insuring the Army at least 20 years of effective service from the officer while guaranteeing that he can retire if he so desires still physically and mentally capable of pursuing civilian endeavours.

4. Definitely and permanently stabilize tours so that family life may be maintained. Accompany stabilization by eliminating the



uneconomical practice of opening and closing hospitals (and camp, posts and stations). This, of course, requires extensive coordination at Department of Defense level using long range projections as a guide. As such, it is subject to change; however, sound planning should eliminate much of the resultant confusion occasioned by closing and opening hospitals. Elected representatives, often responsible for initiating or concurring in such action, require extensive education into the consequences of these practices.

Establish staffing ratios permitting Regular Army clinical physicians (those engaged in active patient care) a 3-4 year stabilized tour and Regular Army administrative physicians (post surgeons, hospital commanders, etc.) a 4-6 year stabilized tour. Attack the problem by graded increments to allow gradual accomplishment of the stabilization. For example, all medical facilities would announce for clinical physicians and administrative physicians that 50% would go on a 3-4 year tour; 25% on a 4-6 year tour and 25% on a 2-year tour. Similar arrangements could be implemented overseas, insuring by Gyroscopic techniques, stabilization wherever one went. The annual input of draft obligated physicians, acting as a buffer, would insure stabilization for the Regular establishment. To move Regular officers in preference to draftees is indeed difficult to comprehend in peacetime particularly if both possess identical professional qualifications.

To continue a 3 per 1000 doctor-troop ratio to provide military medical care disregards the following important medical officer requirements in addition to the primary mission of caring for the officers and enlisted men:

a. Dependents—a *must* if the overall career attractiveness program is to exist. Today's army requires medical care and facilities fully available to all servicemen and their families everywhere.

b. Research and development activities require trained specialists who contribute immeasurably but indirectly to patient care.

c. Medical attachés perform outstanding

overseas services in diplomatic and military assignments. Their importance cannot be denied.

d. Medical administrative requirements as:

(1) Hospital commanders who must be physicians but who frequently do not have the opportunity to treat patients.

(2) Staff physicians at all levels to insure coordination of medical efforts.

(3) Personnel management of physicians, by physicians.

(4) Operations and planning of medical facilities by physicians.

(5) Logistics for medical and non-medical troops.

(6) Intelligence activities (medical) in wartime require well-trained specialists not developed in a fortnight.

e. Preventive Medicine—essential to all military functions.

Does the lay officer have sufficient proficiency in these fields related to medicine and vitally concerning all physicians to insure he can, does and will understand all problems of the physicians? There has been and always will be a need for physicians in administrative capacities. Such a need exists in civilian medical practice; when civilian doctor-patient ratios are calculated these administrators are frequently exempt.

When medical officer limitations as presently imposed, perhaps to forestall drafting physicians, are analyzed it is apparent that a 3 per 1000 is unrealistic, inadequate and apparently established arbitrarily, probably without concurrence of the Surgeons General. Irregardless of the draft, a 3 per 1000 ratio does not consider these many important facets.

5. Limit the draftee physician to grade of Lieutenant or Captain and remove the inequity of a draftee physician entering active duty in field grade for 2 years possessing no military qualifications for field grade duties while simultaneously absorbing a portion of the total Army grade distribution and budgetary allowances. This could be overcome by lowering the draft age and increasing time



out of school for appointment in field grade. It is doubtful that many certified specialists would thereby be lost to the services. Present initial grade appointments for field grade drafted physicians seem to be a result of enthusiastic interest exerted on the Surgeons General to establish and recognize professional experience as the single criteria for grade determination.

6. Allow Medical officers sufficient freedom of action to permit relief from burdensome and bothersome patients in a manner similar to civilian methods. Dispel the fear of recrimination "from the front office" stemming from suggestions that these patients see another medical officer or see a civilian physician, where possible.

Insure that medical officers are rendered proper respect in the military community regardless of age, grade or marital status. It is incumbent on medical officers to conduct themselves in a manner which will command respect of all officers and enlisted men. Medical officers may be recipient of lack of respect due to indiscretion on part of a predecessor. Their reactions to such a situation will determine their reception in the command. Request and respect the medical officers' opinions on other than medical matters and offer some degree of precedence over civilian employees prone, through long standing association with a medical facility, to direct the professional individual's activities. Expect his medical practice to be free of encumbrances occasioned by lay persons not of the medical service (most notable at Class I medical facilities and isolated dispensaries). Junior officers often note a complete lack of hospital headquarters support due to lack of interest, failure to determine facts or fear of lay criticism originating at post headquarters or higher.

7. Establish a system enabling career medical officers in fact for all Regular officers, to partially defray expenses of college education for their children, a major factor in the present resignation rate. It is particularly cogent today in an era highlighted by parental desire for children to have the

college opportunity. This goal is not easily achieved with present day expenses and present day compensations. A type of scholarship payroll deduction plan matched by Services for career officers might well be a solution.

8. It is incumbent to establish the feeling within the physician and within civilian medical societies that troop duty is an absolutely necessary foundation for a well rounded effective military career. By sound indoctrination of all new officers, dispel the thought that effective medicine can be practiced only in Class II hospitals. Require that each and every new officer have an assignment with troops regardless of age, grade, own self evaluation of his medical worth, or the apparent pressing hospital needs for his services.

The new medical officer must learn how the Army operates, learn how the Medical Corps functions as a service and appreciate that its primary purpose is to deliver efficient medical service to his military colleagues. Drafted physicians with troop experience are nearly unanimous as to its value to them as physicians and as men, even though early experiences were new, unusual, and seemed to deny this concept. Similar expressions from those who served their obligated two years in hospitals are negligible.

9. Indiscriminate promises to interested prospects by enthusiastic procurement officers solely to fill the Corps' authorized vacancies is not readily understood. Present resignation rates indicate the inevitable when promises were made regarding resignation possibilities upon completion of training and incurred obligated service without consideration that as Regular Army officers hostilities might interrupt plans for release as anticipated. Korea has well recorded the value of the resident program (a ready pool of available medical manpower), although, of these physicians, a conservative estimate is that at least 50% have resigned and eventually this may exceed 75%. The ban on resignations during emergencies becomes acceptable when all who accept a Regular

Army commission are made fully cognizant of the importance of the commission.

10. Procurement programs for physicians must specifically include their wives insuring, by discussion, that every known good and bad feature of a military career is presented in its proper perspective. Accomplishment of this goal is parallel to interest, enthusiasm and good will of medical commanders, senior officers and their wives. Senior officers' willingness to assist must be personal and spontaneous. A senior officer's ordered interest will produce few medical officers for the Regular Army.

11. Another obstacle to retention of medical officers on active duty or to their attraction to regular service is the 8 year disability clause in the Career Compensation Act of 1949, as amended. Officers generally become aware that this feature definitely acts to their detriment after they decide on a career in military medicine. Repeal of this measure by legislative action will insure that all officers are accorded equitable treatment in the event they should become physically disabled early in their careers. Surprisingly enough this point is rarely brought up for discussion during medical officer procurement efforts principally because the interested officer does not realize its existence.

12. It is to be remembered that regardless of type of position physicians hold (military or civilian), they are individualists, and will be regardless of where they are located. Firmly establish the premise in Congress, Bureau of the Budget, Department of Defense, Department of Army and among service personnel that physicians are not expendable. Neither are they a commodity to be purchased at a price. If a competent Medical Corps is desired for the officers, men and their dependents it behooves those responsible for Army welfare to implement these and/or similar proposals putting aside all personal feelings. Selfish behavior, denying the physician and in turn the personnel, may hasten the day when Army physicians are few, grossly independent, uncooperative and

with little regard for what is thought of them. When such a day arrives it may be too late to revive the cherished position of the Regular Army Medical Corps; military personnel and families will suffer the inevitable results.

To summarize, it is inevitable that the views expressed represent summations of expressions from young medical officers, both Regular and Reserve, many of whom have left the service for many of the reasons indicated. These opinions were obtained over a period of two years while the author was engaged in medical officer procurement activities.

In view of potential atomic warfare against civilian communities the physician who finds himself unable to function under field conditions in a devastated area will fall short of his obligations during a catastrophic emergency.

The expense involved in implementing these suggestions will not approach the cost of the losses of million dollar bombers. Errors in judgment of a pilot losing such an aircraft might well be weighed against that of scores of legislators who are responsible for preserving an effective military medical service.

If implemented, the following major suggestions will enhance the Regular Army Corps as a worthwhile, highly satisfactory, rewarding career and help stem the tide of exodus.

a. Separate grade authorizations for Medical Corps officers and readjustment of basic date of rank.

b. Higher selectivity by promotion boards utilizing best qualified basis for Lieutenant Colonel and Colonel.

c. Stabilized tours both overseas and in the United States with a realistic staffing ratio between doctors and patients.

d. Emphasis on definite 20-year retirement prospects as an attraction to military service.

e. Educational subsidy for children represents a very necessary consideration to all officers.

f. Professional student corps programs

offer vast untapped potentials provided they can be administered by and for the services.

g. Elimination of the 8-year service requirement for disability benefits.

#### ADDENDUM

The author wishes to acknowledge actions which have been taken subsequent to the acceptance of the article for publication:

1. Passage of Public Law 497 "Medical-Dental Officers Career Incentive Act," by the 84th Congress, 2nd session, effective 1 May 1956.
2. Recent Department of Army action to

increase promotion opportunities from Lieutenant to Colonel.

The military committee responsible for presenting information to members of Congress and to Department of Defense officials, receive the highest praise. Elimination of the bonus concept is especially noteworthy. It remains for the future to determine whether or not the principal answer to the complex question of why Medical Officers leave the service is one of financial gain.

Notwithstanding the already enacted changes much remains to be accomplished as previously discussed.



Official U. S. Air Force Photo

Left to Right—Col. R. S. Leone, Maj. Gen. Dan C. Ogle (*Surgeon General*), Brig. Gen. O. F. McIlroy, Col. Verena Zeller, Maj. Gen. W. H. Powell, Jr. (*Deputy Surgeon General*).

During a ceremony at the Pentagon the Surgeon General of the Air Force, Maj. General Dan C. Ogle, presented the Legion of Merit to Colonel Verena M. Zeller, Chief of the Air Force Nurse Corps. Colonel Zeller retired on July 1. (See page 137.)

# An Evaluation of the Role of the Coxsackie Group of Viruses as Etiological Agents of Central Nervous System Disease in Man

By

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**D**URING the past eight years, there has been an increasing number of articles appearing in the medical journals throughout the world dealing with the subject of the "Coxsackie" viruses. The study of the case histories of patients from whom these viruses have been isolated suggests that perhaps the clinical syndromes accompanying Coxsackie virus infection are not separate and distinct entities. Rather they may be manifestations of the expected variation in symptomatology which one observes in so many diseases if different age groups and different populations with varying degrees of susceptibility are being described. This paper will attempt to present the subject of central nervous system involvement (which occurs so frequently in relation to infection by these viruses) in terms of a "disease entity" rather than as a "complication." The emphasis will be placed on presenting information from all parts of the world where this disease has been found, in order to obtain a clearer picture of the manifestations of this disease in different populations with different immunologic spectra.

## BACKGROUND

In 1948, Dalldorf isolated from the stools of patients with poliomyelitis a viral agent pathogenic for suckling mice, but not for adult mice.<sup>6</sup> Since poliomyelitis virus was also isolated from these patients, there was an attempt to relate this new virus to the clinical picture of poliomyelitis in some way. The ease of working with suckling mice may have been a factor in stimulating virologists

throughout the world to look for this new agent whenever an outbreak of poliomyelitis occurred. A number of reports early linked these so-called "Coxsackie" viruses to a central nervous system disease described variously as "aseptic meningitis," "benign aseptic meningitis," "aseptic meningoencephalitis," and "non-paralytic poliomyelitis."<sup>7,8, 27, 28, 30</sup> Unfortunately, the emphasis was placed on the last-named term, and the controversy began as to whether this agent actually caused central nervous system disease, or whether it was merely a coincidental finding in patients whose symptoms were due to other agents—particularly undetected poliomyelitis. Since most of this work was done on specimens obtained during poliomyelitis epidemics, it was difficult to refute the possible coexistence of two viral agents—one being the cause of the clinical picture (i.e. poliomyelitis virus), and the other causing a subclinical infection or no infection at all (i.e. the Coxsackie virus). This point of view became increasingly prevalent as the Coxsackie viruses were related to other clinical syndromes, particularly epidemic pleurodynia<sup>3, 11, 46</sup> and herpangina.<sup>15, 33</sup> In addition, a large group of non-specific febrile illnesses, categorized as "summer grippe" or "minor illness" was attributed to Coxsackie virus infection.<sup>30, 35</sup> In the course of establishing the viral etiology of herpangina and epidemic pleurodynia (Bornholm disease), controlled studies demonstrated the ubiquitous nature of this group of viruses. There was apparently no great difficulty in isolating the group A Coxsackie viruses from the stools of healthy individuals and from the sewage of the large cities with frequencies ranging from 1 to 10 per cent depending on the season of the year.<sup>15</sup> Circulating anti-

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bodies against certain of the Coxsackie group A viruses were found in from 10 to 90 per cent of the individuals tested, both in this country and abroad.<sup>34</sup> Because of this widespread distribution of these viruses, the concept developed that the previous reports of central nervous system involvement by these viruses were premature, and that there was "little basis for the hypothesis that any of the viruses encountered were producing illnesses likely to be confused with clinical syndromes ascribed to infection with the poliomyelitis virus."<sup>15</sup> This, in general, has been the doctrine which has been perpetuated through the medium of the textbooks. Since 1952, there has been a certain reluctance in this country to ascribe any etiologic significance to these viruses when found. They have been described as the "*B. coli* of the virus world."<sup>12</sup> Beeson's article in the 1954 edition of Harrison's *Principles of Internal Medicine* states:

There is some evidence linking the Coxsackie group of viruses with other forms of human illness, including . . . aseptic meningitis and paralytic or non-paralytic poliomyelitis. However, because of the frequent presence of these viruses in the throats and intestinal tracts of healthy persons, caution must be exercised in attributing a specific etiologic role to them. At present, the evidence is convincing only in respect to epidemic pleurodynia and herpangina.<sup>1</sup>

An additional source of confusion has been introduced into this subject with the application of the principles of tissue culture to the study of the Coxsackie viruses. The existing classification of these viruses had been developed largely on the basis of pathologic changes induced in suckling mice (for differentiating between the two groups, A and B), and on the antigenic differences between the types existing within each of these two groups. On working with tissue cultures, it was discovered that certain of the specimens which had been found to be non-pathogenic for suckling mice, and therefore were considered "negative," actually became pathogenic for suckling mice after a passage or two growing on monkey kidney cell or

HeLa cell tissue culture.<sup>18, 37</sup> This has been particularly true for the Group B Coxsackie strains, and has led to the realization that the existing criteria for categorizing an agent as a "Coxsackie" virus must be redefined. It is neither within the scope of this paper nor within the capabilities of this author to attempt this redefinition. However, it is mentioned here specifically to explain the failure of this paper to enter into the classical pattern of discussion of the Coxsackie groups in terms of relating herpangina to group A infections, and epidemic pleurodynia and aseptic meningitis to infections with Group B. Although the existing literature supports such a relationship, it is felt that this discussion should be limited to presenting evidence concerning the role of these viruses as etiologic agents of central nervous system disease regardless of the "group" or "type" assigned to the individual virus strains. This is done mainly in an attempt to limit the scope of the paper—and does not imply that the Coxsackie viruses constitute a single homogeneous group.

#### REVIEW OF EVIDENCE INCRIMINATING COXSACKIE VIRUSES IN CNS DISEASE

There are five areas which should be considered when attempting to evaluate the etiologic role of these viruses in central nervous system disease:

I. The central nervous system manifestations of those clinical syndromes which are accepted as being due to actual infection by the Coxsackie viruses;

II. The reported cases of CNS disease in which a Coxsackie virus has been isolated from the spinal fluid;

III. The reported cases of CNS disease occurring in laboratory workers infected with Coxsackie viruses;

IV. The reported cases of CNS disease in which there is strongly suggestive epidemiological, clinical, and laboratory evidence to support the relationship to Coxsackie virus infection; and

V. Evidence bearing on the possible inter-



relationship between the Cocksackie viruses and the poliomyelitis viruses.

*I. Central Nervous System Manifestations of Clinical Syndromes Accepted as Being Due to Cocksackie Virus Infection*

A. *Herpangina*. It is interesting to note that one of Zahorsky's early descriptions of herpangina contained the following statements:

"The child feels tired and often complains of pains in the neck and extremities. Headache and pains in the back of the neck are frequently marked symptoms and lead one to suspect poliomyelitis at times. This impression is often accentuated by the tenderness of the extremities on movement. . . . I desire to call attention to its possible source of acute poliomyelitis since faucial vesicles are not unknown in this . . . disease, and it has been my experience in a few families to find one child with herpangina and another with typical poliomyelitis. . . ."<sup>16</sup>

The clinical observations of several authors have also implied a relationship between central nervous system disease and herpangina. Hubert et al.<sup>17</sup> described an epidemic of aseptic meningitis accompanied by vesicular pharyngitis. In Finland, three cases of herpangina were observed in which two of the patients developed meningitis, and the other developed encephalitis; Cocksackie virus was isolated from the stools of these patients.<sup>34</sup> Johnsson reported a case from Sweden in which a 29 year old man developed pleurodynia and meningitis in association with typical herpangina; this patient's stool specimen yielded Cocksackie virus, and his serum showed a rise in neutralizing antibody titer against his own virus strain.<sup>22</sup> In addition to these cases, it should be mentioned that "pharyngitis" is one of the commonest physical findings observed in cases of CNS involvement associated with Cocksackie virus isolations.<sup>34, 47</sup> These few examples are not furnished as "evidence" that the same etiologic agent can cause both herpangina and meningitis in the same patient. They are, however, intended to focus attention on this as a possibility.

B. *Epidemic Pleurodynia*. Meningitis has been recognized as a relatively common com-

plication of Bornholm disease for over 20 years.<sup>16, 34</sup> The frequency of the occurrence of this "complication" seems to vary considerably in different outbreaks. There have been several reports in the literature of cases of meningitis without myalgia occurring during the course of an epidemic of this disease.<sup>7, 26</sup> Gabinus et al.<sup>12</sup> studied an outbreak of pleurodynia in Sweden, in which 21 cases were hospitalized with complications of pleuritis or meningitis. In addition, 7 cases of aseptic meningitis without myalgia were hospitalized, and these patients were often epidemiologically associated with typical cases of pleurodynia. The meningeal symptoms appeared 5 to 9 days after onset of the disease; 17 patients were found to have pleocytosis in the cerebrospinal fluid; even though several of these complained only of headache. Stiff necks were usually of short duration, and headaches persisted for about a week. Three of the cases of meningitis had pleuritis with a demonstrable friction rub. Serologic and virologic studies demonstrated the etiologic relationship of the Cocksackie viruses to this outbreak. Johnsson found that during this same outbreak, multiple family cases were common; the children reacted more often with aseptic meningitis or "minor illness," whereas the adults more often developed typical pleurodynia.<sup>21</sup> Wilkins et al.<sup>47</sup> reported 3 cases of pleurodynia who developed meningitis and from whose spinal fluids Cocksackie group B viruses were isolated. This group also studied 5 cases of "meningoencephalitis" occurring during an outbreak of Bornholm disease in S. Rhodesia. One of these had an attack of pleurodynia just prior to the onset of CNS symptoms. Two other patients had muscle pains suggestive of Bornholm disease several days before onset of CNS symptoms.

*II. Reported Cases of Central Nervous System Disease in Which Cocksackie Viruses Have Been Isolated from the Cerebrospinal Fluid*

In view of the difficulties usually associated with demonstrating etiological agents

in the spinal fluid, even in cases of known viral origin, it is not surprising that there are only a few reported cases of such isolations in Coxsackie virus disease. Table I lists 12 such cases which have been reported in the literature. The most impressive of these are the Canadian cases reported by Duncan et al.<sup>8</sup> These patients were aged 3, 4, and 6 years, respectively and their clinical diagnosis was "aseptic meningitis-probable non-paralytic poliomyelitis." The 3 spinal fluids grew out Coxsackie group B viruses only after trypsinized monkey kidney cell tissue cultures were employed for the isolations. All 3 patients showed increases in neutralizing antibody titer against their homologous virus strains, and none developed any rise in antibody titer against any of the types of poliomyelitis.

The case from Sweden was an 8 year old boy who developed fever, headache, and stiff neck during an epidemic of Bornholm disease; he had cells in his spinal fluid, and Coxsackie group B3 virus was isolated from his spinal fluid, throat, and feces; his serum showed a significant rise in titer against the homologous virus.<sup>12</sup> Hummeler et al.<sup>18</sup> isolated a strain of Coxsackie group B2 from the spinal fluid of a 16 year old boy who was one of 11 patients involved in an outbreak of aseptic meningitis in a mental institution. This patient had fever, headache, sore throat, generalized muscle aches, fatigue, nausea, stiff neck, dizziness, and unusual nervousness. He had spinal fluid pleocytosis; serum neutralizing antibody against the homologous virus strain was present. However, the first blood specimen was not obtained until 16 days after the spinal fluid was collected, and no significant rise in antibody titer could be demonstrated. In South Africa, Coxsackie B3 viruses were isolated from the spinal fluid and feces of 6 patients, all of whom had meningoencephalitis, and 3 of whom had Bornholm disease immediately preceding the meningeal involvement.<sup>13, 47</sup> The case reported from Argentina<sup>32</sup> is somewhat questionable. The categorizing of the isolated virus as a "Coxsackie strain" may be subject

to criticism since the agent was pathogenic for adult mice as well as suckling mice (although only after treatment with Cortisone); also, the clinical picture of papilledema and "diplegia" are quite unusual.

It should be expected that in the near future a significant number of cases of Coxsackie virus isolation from the cerebrospinal fluid will appear in the literature. The use of trypsinized monkey kidney cell tissue cultures, supplemented by HeLa cell tissue cultures, should yield a higher proportion of positive isolations than was true for suckling mice inoculation techniques.

### III. Reported Cases of Central Nervous System Involvement Occurring During the Course of Laboratory Infections with the Coxsackie Viruses

The use of the human volunteer to study the clinical course of Coxsackie virus disease has been very limited thus far.<sup>10</sup> There have been several reported cases of inadvertent human infections occurring in laboratory workers. One of the most striking of these, described by Shaw and his coworkers,<sup>36</sup> occurred in a 29 year old female investigator who accidentally pipetted a suspension of Coxsackie B2 virus into her mouth. She developed nasal congestion on the 2nd day; headache and depression on the 3rd; diffuse thoracic pain on the 4th; and muscle pains and cutaneous hyperesthesias on the 5th day. She was asymptomatic on the 6th day, but then developed anorexia, nausea, fever, stiff neck, and stiff back. Lumbar puncture showed 375 wbc/cmm; and a Coxsackie B2 virus was isolated from the feces and throat swab. Her pre-illness serum had no antibodies against this strain, but by the 4th day of her meningitis the serum contained a high titer of neutralizing antibodies against this strain of B2. Four other laboratory workers developed pleurodynia while working with Coxsackie strains which had originally been isolated from patients with aseptic meningitis.

Johnsson<sup>19</sup> described a 39 year old physician who had been working in the laboratory

TABLE I  
ISOLATIONS OF COXSACKIE VIRUSES FROM SPINAL FLUID  
(adapted from refs. 8, 12, 18, 32, 47)

Country	No. of Cases	Group Isolated	Source		Method of Isol.	
			CSF	Feces	Mice	Tissue Cult.
Canada	3	B	+	+		+
Sweden	1	B	+	+	+	
U.S.A.	1	B	+		+	+
Argentina	1	?	+	+	+	
S. Africa	6	B	+	+		+

with Coxsackie viruses; his symptoms included myalgia, fever, pharyngitis, and conjunctivitis—followed on the 5th day by signs of meningeal irritation. He had spinal fluid pleocytosis; Coxsackie group B3 virus was isolated from his throat and feces; and his serum developed a significant rise in neutralizing antibody titer against the homologous strain. He had a prolonged convalescence of 2 months, with persistent irritability, fatigue, and insomnia. Three other laboratory infections occurred with this same B3 strain. All 3 had typical pleurodynia, and one of them developed headache, vomiting, stiff neck and stiff back on the 5th day of symptoms; however, no lumbar puncture was performed on this patient.

In recent weeks, the author has personally observed an illness in a physician who has been engaged in research work on the Coxsackie viruses. This patient has been incapacitated by a wide gamut of symptoms which ranged from fever, myalgia, typical pleurodynia, and cutaneous hyperesthesias; to headache, stiff neck, stiff back, and marked irritability. He had a spinal fluid pleocytosis; and Coxsackie group B2 virus was isolated from his stool specimens. Further studies are underway in this case, and the clinical picture has not yet run its course.

#### IV. Reported Cases of Central Nervous System Disease in Which There Is Strongly Suggestive Epidemiological, Clinical, and Laboratory Evidence to Support the Relationship to Coxsackie Virus Infection

This group of patients includes those from whose throats or stools Coxsackie viruses

have been isolated, and whose blood specimens showed a significant rise in neutralizing antibody titers against the isolated virus strain. It also includes those individuals epidemiologically associated with these patients.

In the Swedish outbreak of pleurodynia previously cited,<sup>12</sup> there were 17 cases of aseptic meningitis; in addition to the case from whose spinal fluid the virus was isolated, there were 5 Coxsackie group B3 viruses isolated from other cases; 4 of these showed a significant rise in neutralizing antibody titer against B3 virus strains.

Hummeler<sup>18</sup> described 11 cases in whom meningeal signs were present, and who showed spinal fluid pleocytosis ranging from 22–99 wbc/cmm. Myalgia was a prominent symptom. There were 4 isolations of Coxsackie group B2 virus from stool specimens, and 1 from a throat swab (in addition to the previously cited positive spinal fluid isolation).

Kirby and Evans<sup>25</sup> reported on 30 cases of "nonparalytic poliomyelitis"; 13 of these patients had Coxsackie group B viruses in their stools, and high rising neutralizing antibody titers against these viruses in their sera. The clinical course and spinal fluid changes in these patients was indistinguishable from those observed in true non-paralytic poliomyelitis. In 5 of these cases, the results of neutralization tests carried out with poliomyelitis viruses showed definite evidence that there had not been a recent poliomyelitis infection. The other cases were inconclusive in this regard.

Stanley and his workers in Australia<sup>40</sup> re-

ported on 11 patients with Coxsackie group B3 in their stools, and rising neutralizing antibody titers against the homologous virus strains. The predominant symptoms in these patients were fever, headache, stiff neck, muscle pains, sore throat, abdominal pain, lassitude, and muscle weakness. Sequelae were common, and consisted of severe headaches, photophobia, nystagmus, and dizziness. This illness was called "encephalitis."

*V. Evidence Bearing on the Possible Interrelationships Between the Coxsackie Viruses and the Poliomyelitis Viruses*

This subject has been purposely left for last, since it has received more emphasis in the literature, and has added more confusion to that literature, than any other single problem in this field.

There are many similarities between these two classes of viruses. They have been found to have similar physical and chemical properties (both being relatively small, and fairly resistant to heat and to pH changes). Both have been isolated from sewage and from flies; both seem to occur most frequently in late summer; and both are quite widespread.<sup>34</sup> In most countries, infection by both of these viruses seems to occur fairly early in life, since there is a high incidence of detectable antibody in the sera of older children and young adults. Studies on pooled human plasma or gamma globulin indicate that antibodies against group A Coxsackie strains are more widespread than poliomyelitis antibodies; and that group B antibodies seem to occur with about the same frequency as poliomyelitis antibodies.<sup>37, 39</sup> It is not surprising that two such ubiquitous viruses should be found together in the same com-

munity in the same season. It seems unfortunate that the major emphasis was placed on attempting to demonstrate that the Coxsackie virus in some way influences the occurrence or severity of an epidemic of poliomyelitis, or influences the occurrence of paralysis in patients harboring the poliomyelitis virus.<sup>14</sup>

Dalldorf<sup>4</sup> postulated that there might be some synergistic effect between the A strains of Coxsackie virus and the poliomyelitis viruses, based on the early observations that group A occurred in a fairly high percentage of poliomyelitis patients in certain epidemics. On the other hand, he was able to demonstrate that Coxsackie group B3 virus had a somewhat antagonistic effect on the Lansing strain of poliomyelitis in laboratory experiments with mice. This observation was extended to clinical data which seemed to indicate that epidemics of pleurodynia and poliomyelitis practically never occurred simultaneously in the same region. This hypothesis of antagonism between these two viruses does not have enough supporting evidence as yet to afford it serious consideration. On the contrary, the reported cases of Kirby and Evans<sup>25</sup> are examples of the coexistence of these two viruses in the same community, both apparently causing their own clinical pictures. The use of tissue cultures for studying the Coxsackie viruses may bring about drastic changes to these hypotheses.

A summary of the reported cases of "Poliomyelitis" which have been examined for the presence of Coxsackie viruses is presented in Table II. This type of data cannot be properly evaluated in the absence of any control figures which might indicate what percent of the population in these various

TABLE II  
OCCURRENCE OF COXSACKIE VIRUSES IN PATIENTS WITH A CLINICAL DIAGNOSIS OF POLIOMYELITIS  
(adapted from ref. 34)

Diagnosis	No. of cases examined	No. of Pos. Coxsackie Isol.	% Pos. Isol.
Paralytic polio	585	38	6.5
Non-paralytic polio	534	62	11.6
Polio (undefined)	888	77	8.7

TABLE III  
ISOLATION OF COXSACKIE VIRUSES IN VARIOUS CLINICAL SYNDROMES—AND IN CONTROLS  
(adapted from refs. 12, 24, 31, 34, 41)

Diagnosis	No. of Cases		No. Positive for Coxsackie		% Pos.
Poliomyelitis (Total)	641		21		3.2
Paralytic		499		10	2.0
Undefined		142		11	7.7
Aseptic meningitis	646		29		4.5
Encephalitis	76		6		7.9
Bornholm disease	162		15		9.3
Herpangina	79		14		17.7
Other diseases	508		13		2.6
Healthy controls	174		3		1.7

countries are harboring the Coxsackie viruses during the Poliomyelitis season.

In recent years, there have been a few attempts to conduct such controlled studies. The approach has been the study of patients with symptoms of the type attributed to Coxsackie virus infection (i.e. "poliomyelitis," pleurodynia, herpangina, aseptic meningitis, and encephalitis) and comparing the incidence of virus isolations from the stools with the incidence of isolations from fecal specimens of similarly studied control groups. Studies of this nature have been carried out to some extent in Sweden, Germany, Finland, and Australia, and the results have been combined in Table III. (The heterogeneity of the groups, and the differences in diagnostic criteria used, markedly reduce the value of such a table—but do not render it uninteresting.) In this country, controlled studies done by Heubner and his coworkers have already been cited.<sup>15</sup>

The evidence seems to indicate that the Coxsackie viruses produce a clinical picture completely indistinguishable from the picture of nonparalytic poliomyelitis; and that much of the confusion in this field is the result of misdiagnosing cases of Coxsackie "meningitis" as poliomyelitis. The proof of this hypothesis awaits a series of well-controlled experiments, utilizing the newer techniques of virology, and designed to detect the presence of these viruses in different age groups, different socio-economic groups, and in the

different seasons of the year.

#### CONCLUSIONS

There no longer seems to be any justification for doubting that certain of the strains of the Coxsackie viruses can produce clinically manifest central nervous system disease in man. The evidence for this seems quite convincing in view of:

- a) the virus isolations from the spinal fluid of patients with meningitis;
- b) the occurrence of meningitis in the course of laboratory infections with the Coxsackie viruses;
- c) the occurrence of meningitis or meningoencephalitis during outbreaks of Bornholm disease;
- d) the occurrence of central nervous system disease in family contacts of known cases of Coxsackie virus infection;
- e) the increasing number of cases of clinically proven meningitis in which Coxsackie virus isolations from the stools, rising serum neutralizing antibody titers against the homologous virus strains, and negative laboratory tests to rule out poliomyelitis, are being demonstrated together in the same patients.

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### NOTICE TO MEMBERS

The Resolutions Committee for the 63d Annual Convention of the Association of Military Surgeons to be held at the Hotel Statler, Washington, D.C., November 12-14 is composed of the following:

Major General James P. Cooney, MC, USA (Chairman)  
Rear Admiral Bruce E. Bradley, MC, USN  
Brig. General Olin F. McIlhenny, USAF (MC)

Members desiring to submit resolutions for consideration by this committee should address them to the Headquarters of the Association, 1726 Eye St., N.W., Washington 6, D.C.

## Experiences with a Mass Chest X-Ray Survey

By

MAJOR ALOIS PECZENIK, MC, USA,<sup>†</sup> AND CAPTAIN DAVID W. DUTTWEILER, MSC, USA<sup>‡</sup>

**A**LTHOUGH the mass chest x-ray survey is a recognized public health procedure and is routinely conducted with little difficulty by many civilian health agencies, its use in the Army has not been well documented. The authors' experiences with such a survey are described here in an attempt to facilitate this procedure for others and to encourage its use where indicated. This paper does not attempt to deal in detail with the results of the survey, since results of such surveys have been adequately reported by others.<sup>1</sup> In addition, the sudden phase-out of the theater interfered with the plans for extensive follow-ups on all suspected cases.

The decision to conduct a chest x-ray survey in USFA (U. S. Forces in Austria) was made in October 1954, based upon a conspicuously increased incidence of pulmonary tuberculosis in military personnel during the first nine months of the year; the incidence of this disease had been low during the preceding four years, shown in Table I.

The scope of the survey was limited to (a) enlisted personnel, (b) American civilian employees, and (c) dependents over the age of 12 years. Officers were excluded, since the annual medical evaluation of officers includes a chest x-ray. The greatest effort was made to survey all enlisted personnel, many of whom had not had a chest x-ray for several years.

It was planned to utilize a van-mounted mobile chest x-ray unit, loaned by the Medical Division, USAREUR (U. S. Army

Europe), to survey personnel in the Linz and Salzburg areas in Austria (including two large and several small camps) in order to avoid overloading fixed facilities. About 80% of the command's military and civilian populations were located in these areas. At Vienna and Innsbruck, Austria, and Leghorn, Italy, it was decided to utilize the available fixed facilities, since these stations each had a relatively small number of eligible personnel and were remote from the areas to be surveyed with the mobile unit.

### PREPARATIONS

Other commands in Europe having experience with mass chest x-ray surveys were visited in order to become familiar with past operational problems, and to aid in the determination of personnel and supply and equipment requirements. These visits proved to be extremely helpful in establishing an efficient operating procedure.

Concurrently, the American Tuberculosis Association was contacted for assistance in obtaining educational and publicity materials. Movie trailers, posters, and "hand-outs" which were suitable for use in a military population were selected from the list of available materials and were subsequently shipped gratuitously in generous amounts.

Arrangements were made with various medical units in the command to furnish the necessary operating personnel, described in detail below, and requisitions were placed for the required supplies and equipment. A tentative starting date of 1 April 1955 for the survey was established, considering the availability of the mobile unit, weather conditions, and operational plans for the troop units.

A "Survey Officer" (Lt. MSC) was selected to assume active control of the project. Standing Operating Procedures and tentative schedules for the orderly processing

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TABLE I. CASES OF PULMONARY TUBERCULOSIS IN USFA MILITARY PERSONNEL, 1950-1954

Year	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Total
1950	1	1	0	0	2	0	0	0	0	0	1	0	5
1951	0	0	0	1	0	0	1	1	0	0	1	0	4
1952	0	1	0	0	0	0	0	1	0	3	0	0	5
1953	0	0	0	0	0	0	0	0	0	0	0	0	0
1954	0	1	2	1	1	1	0	1	2	3	1	1	14

of personnel at each camp were prepared, and selection of specific sites for the mobile unit at each location were made, based on the availability of water, shelter for examinees and administrative personnel, access to the site, and drainage.

A "flow pattern," shown in Figure 1, for the entire operation was devised, which, after some modification during the survey, was essentially as follows:

1. A file card (Figure 2) is completed for each examinee at the mobile unit, and his name entered in a master Log. His x-ray is identified with date, Log number and name.

2. File cards (in numerical order) and processed x-ray films are forwarded to the Film Reading Center.

3. After interpretation of the film, the corresponding file card is annotated and appropriately filed. If requiring further examination, the examinee is requested by letter to report to a specified U. S. Army Hospital, and record is made on his card.

4. The corresponding x-ray is forwarded to the specified hospital to be used in evaluation of the additional 14" × 17" plate.

5. The "repeat" 14" × 17" x-ray is made at the U. S. Army Hospital.

6. Results are reported to the Film Reading Center.

7. If additional examination is required, the hospital Army Health Nurse is notified; she then follows the case until admitted or other disposition is made, reporting the final outcome to the Film Reading Center.

8. Final results are entered on the examinee's card, which is filed accordingly.

#### OPERATION

The mobile x-ray unit consisted of an 11-

ton tractor-drawn semi-trailer van in which was mounted a 100 m.a. photofluorographic unit, using 4" × 10" film, and darkroom facilities (Fig. 3). The x-ray unit produced two 4" × 5" pictures on each film by means of a sliding film holder. Supplementary electric power and water supply were necessary. Electric power was supplied by a 15 kw and a 5 kw generator in preference to using local power, which was known to have fluctuations that would cause shortened x-ray tube life and adversely affect the operation of automatic controls. Water was supplied locally using 300 feet of hose to connect to available building taps.

Personnel for the operation of the unit, in addition to the Survey Officer, included two experienced x-ray technicians (NCO's) who were responsible for the operation of the x-ray equipment and positioning of examinees, three dark-room technicians who processed film, three clerk-typists who handled administration, a medical equipment maintenance- and repair-man, and three vehicle drivers who also operated and maintained the generators.

After a short training period which enabled the personnel to determine the characteristics and limitations of the unit, the survey began on schedule. It was soon found that the administration (typing file cards, entering examinees' names in Log book, and completing labels for identification of films) was the most time-consuming element of the operation. By recruiting additional clerical help from units being examined, a maximum rate of 250 examinees per hour could be reached. Over a 7-hour daily operating period (the eighth working hour was utilized to prepare the unit for the day's operation and to

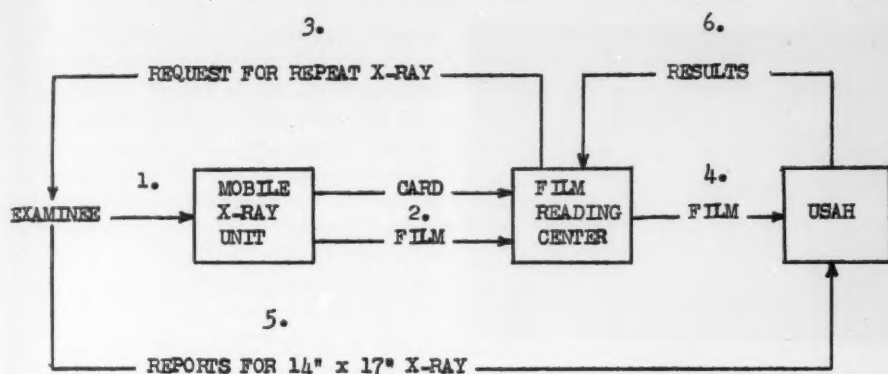


FIG. 1. Flow diagram—Mass chest x-ray survey.

clean it after closing), an average rate of 90-120 examinees per hour was easily maintained, using the normal complement of personnel.

At the end of each day's operation, the film cards and processed film were forwarded to the Film Reading Center, where the cards were filed in numerical order in an "Unread" file and the 4" × 10" films were prepared for reading by cutting into two 4" × 5" pictures. After the x-rays were interpreted by a radiologist with the aid of a masked standard illuminator, they were segregated (according to the classifications, "Negative,"

"Suspicious," "Imperfect") and placed in numerical (by Log number) order. The corresponding cards were stamped with the appropriate classification and filed alphabetically. Action was then taken as follows:

a. Negative films were filed in numerical order. Their incorporation into the x-ray files of the local medical establishments for future reference was planned, but was not done because of the rapid dispersion of the personnel due to the phase-out.

b. Imperfect films were discarded and the corresponding cards grouped to facilitate "re-takes" at a later date at the mobile unit.

USFA MASS CHEST X-RAY — 1955					
Last Name		First Name		Middle Initial	Log Number
Organization				Station	
Rank	ASN	Age	Weight	Date	
Remarks:					

FIG. 2. File Card.





U. S. Army Photo

FIG. 3. Photofluorographic Unit.

c. Cards stamped "Suspicious" were grouped for preparation of requests for 14" × 17" repeat films, stamped to indicate date of request, and notation of first findings was made. The "Suspicious" films were at once forwarded to the appropriate U. S. Army Hospital.

Through maintenance of a "Suspense," "Repeat-Negative," and "Repeat-Positive" file, it was possible to follow closely each examinee whose x-ray was initially interpreted as "Suspicious" until a final definitive diagnosis was made and the patient admitted, or cleared of any chest condition.

With one full-time clerk and a part-time radiologist, the Film Reading Center was able to process 500 films daily with little difficulty.

#### RESULTS

The signing of the Austrian State Treaty

brought the survey to an abrupt end. The mobile unit had succeeded in processing 8652 exposures, of which 412 or roughly 5% were imperfect and unreadable, giving a total of 8240 films interpreted. Of this number, 143 were initially read as "Suspicious." Sixteen of the suspicious cases could be classified as "Positive," i.e. requiring admission to a hospital and/or diagnosed as a definite pathological chest condition of some type. Of the sixteen cases, five were definitely diagnosed as heretofore unknown cases of active pulmonary tuberculosis requiring medical treatment.

At the fixed installations, a total of 3038 x-rays (14" × 17") were interpreted, with 40 initially read as "Suspicious." Of the 40, 18 were classified as "Positive," with 3 definitely diagnosed as active pulmonary tuberculosis.

Because of the phase-out of the command, it was not possible to follow many suspicious cases which were evacuated for further diagnostic procedures or placed under surveillance, some of which may have proved to be active during an extended period of observation. For this reason, results of the survey, shown in Table II, are simplified, but are nevertheless indicative of the accomplishments a mass chest x-ray survey may be expected to produce.

#### LESSONS LEARNED

A number of aspects of this survey should serve as warnings or encouragement to

TABLE II. RESULTS—1955 USFA MASS CHEST X-RAY SURVEY

	Mobile Unit	Fixed Facilities	Total
Exposures Processed	8,652	3,038	11,690
Imperfect	412	—	412
Interpreted	8,240	3,038	11,278
Initially Suspicious	143	40	183
Suspicious Proved "Positive"	16	18	34
Diagnosed Pulmonary TBC	5	3	8
Rate Suspects Per 1,000 Read	17.4	13.2	16.2
Rate "Positives" Per 1,000 Read	1.9	5.9	3.0
Rate Pulm TBC Per 1,000 Read	0.61	0.99	0.71

others. It was found that participation of dependents on a voluntary basis, despite wide publicity and personal appeals, was extremely poor: approximately 10% of the eligible dependents reported to the mobile unit, although it had been located in the heart of several housing areas.

The administrative load of the entire operation is the most time-consuming and at certain stages (identification of film, follow-up of "suspicious" cases) is the most critical. The reduction of the clerical work to an absolute minimum is desirable, although caution should be used in eliminating such safeguards as the master Log book.

The smooth operation of the equipment of the mobile unit is believed to be a direct result of the use of generators for electric power supply, and the attendance of a competent medical equipment maintenance man. Although there were several stoppages, prompt repair kept the time lost to an absolute minimum. In addition, the good quality of the films could be maintained by constant adjustment and preventive maintenance of the equipment.

Sites for a mobile unit should include provision for adequate shelter for administrative personnel and examinees, and, in addition

to the availability of water, should have good drainage.

#### SUMMARY

A mass chest x-ray survey, utilizing fixed x-ray facilities and a mobile x-ray unit, is described. It was found that the particular mobile unit used would process 90-120 examinees per hour for an entire 7-hour operating day, or 630-840 per day.

Results of the survey are briefly discussed, indicating an over-all "positive" rate of 3.0 per 1000 films interpreted.

The pitfalls encountered and the lessons learned in the operation of the survey are emphasized as a means of simplifying such a procedure for others.

#### ACKNOWLEDGMENT

The authors wish to take this opportunity to express their gratitude to Colonel J. U. Weaver, MC, former Chief Surgeon, U. S. Forces in Austria, now Commanding Officer, Medical Training Center, BAMC, Fort Sam Houston, Tex., for his wholehearted support of the project described in this paper.

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#### AVAILABLE NOW

*Mass Casualties—Principles Involved in Treatment.* The 190 page reprint of the text material which appeared in the April 1956 issue of *MILITARY MEDICINE*. \$1.50 per copy—Special price for more than ten copies.

## Newer Developments in Blood

By

FRANK E. WILSON, M.D.\*

*Executive Vice President, Joint Blood Council*

IN THE emergency room, the operating and delivery rooms of both military and civilian hospitals there is usually available a bottle of quality blood for the patient. It is a far cry from yesteryear when whole blood was used as a last resort and for life-saving purposes only; when frantic calls went out for donors, many of whom were incompatible or otherwise unsatisfactory. Today these donors' time for the bleeding is worthwhile for even if their blood should be incompatible with the patient's it will still be used, and the patient can get blood already donated by someone else. There is certain luxury in having blood when needed and it is important to have blood at the donor's convenience instead of under stress. This splendid arrangement came about through blood banking.

World War II provided the need and widespread encouragement for whole blood in the medical armamentarium. The Korean war proved the value of blood banking organizations and indicated the necessity for unity between them. Last year the five national associations most concerned with an over-all national blood program formed the Joint Blood Council. In the field of blood this Council represents the medical profession generally from the American Medical Association; hospitals from the American Hospital Association; medical specialization from the American Society of Clinical Pathologists; independent blood banks from the American Association of Blood Banks; and Red Cross regional centers from the Red Cross. These Member Institutions correctly believed that each could learn from the experience of the other. Headquarters for the Council is in Washington, D.C. It has official encouragement from President Eisenhower.

Plans are now under way for the Council to conduct a nationwide survey of blood banking facilities and publish a directory. For the first time there will be established an authentic record of blood banking facilities; where they are, the extent and method of operations. It will undoubtedly form the basis for many future programs of interest to National Defense and to the pharmaceutical and hospital supply industries. By simply focusing national attention on each blood bank's operation we hope there will be some self-analysis of local and national procedures, standards and philosophies. It remains to be seen how throwing the light of public scrutiny on all types of blood banking will of itself tend to eliminate that which is bad and promote that which is good.

As indicated in the first paragraph, we have come a long way in developing blood banking. In the not too distant future we shall see the results of today's intensive blood research, perhaps a lengthening of the usable life of whole blood far beyond the present 21-day span. Eliminating the hazard of hepatitis virus in plasma is a hopeful possibility which may soon be enjoyed. These two developments alone will accelerate much of the progress which has been retarded until recently. Blood banking and research have paved the way for the formation of many artery, bone, eye and other tissue banks. These banks, many of which were born and still housed in community blood banks, have brought ophthalmologists, dermatologists, and more surgeons closer to the appreciation of a blood bank's potential.

The Joint Blood Council has many questions before it and a tolerant and helpful profession giving support will be rewarded by better answers which can be used as guidelines in blood banking, research and education. Some of these questions are:

\* Brigadier General, U. S. Army, Reserve.

How much whole blood is being used today? Can banking facilities be expanded quickly and sufficiently in case of another war? Should the government subsidize fractionation plants as it does other defense industries? Are blood expanders safe for every physician to use? Should insurance companies cover the cost of blood in their contracts? If so, will this dry up the motivation for voluntary blood donations?

One question put to the Council on charges for blood has been answered to the satisfaction of the Member Institutions listed above. It is, "Since blood is derived from human beings only, it should not be sold for profit. However, all services rendered in the

collection, storage and administration of blood cost something and are paid for by or on behalf of every recipient of such services. When a service charge is made to the recipient, it may include all or part of the costs of the operation, including normal depreciation but the intentional realization of substantial profit is not approved."

The military medical services have contributed time, talent and money to continuing research in blood and its derivatives. The results are being put into practical application every day in both civilian and military communities.

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#### SUPPORT

#### CIVIL DEFENSE WEEK

September 9-15, 1956

## Blood Donors in a Naval Hospital\*

By

CAPTAIN JOHN J. ENGELFRIED, MSC, U. S. Navy

SINCE this Naval Activity has an excellent source of available blood donors, this Donor Center supplies the whole blood requirements of the Naval Hospitals of the entire Eleventh Naval District.

No remuneration is given for any blood donated, neither is any payment accepted for blood used from this Donor Center, and no patient is requested to replace any blood. Furthermore, this Donor Center replaces the blood used for all Service personnel of this Naval District or their dependents at any civilian hospital.

The primary source of donors is obtained from two large local activities, the Naval Training Station and the Marine Corps Recruit Depot. The Naval Training Station supplies one to two companies of recruits four days each week; while the Marine Corps Recruit Depot supplies one to two platoons of Marines each week. When additional blood donors are required the other local Naval and Marine Activities supply the donors requested.

The Petty Officers in charge of the company or platoon screen the prospective volunteer donors prior to breakfast on the morning that they are to report to the Donor Center. Breakfast is withheld from those that appear satisfactory and they are transported by bus to this Activity, arriving not later than 0730 hours.

On arrival, each man fills out a donor's card. If the questions are answered satisfactorily his temperature, pulse rate, blood pressure, and hemoglobin are recorded on this card. A blood bank nurse carefully examines the cards, rejecting those that are

not satisfactory. The prospective donors are then served orange juice. The rejected donors are given breakfast and wait for the remainder of their company or platoon.

A Medical Officer examines each donor's card and performs a physical examination. The physically qualified donors are bled.

Eight bleeding tables manned by four Blood Bank technicians or students are used.

After phlebotomy, coffee and rolls are served in the Recovery Room, where the donors remain for at least ten minutes. The donors are then served eggs and a steak dinner in the Mess Hall. They are given all the food they wish to eat. Routinely, the phlebotomies are completed by 1100 hours each morning and the men are returned to their respective Activity.

### RESULTS

During the first six months of 1955—7,625 Service personnel volunteered to donate blood. Of this group 5,769 gave successful donations while 1,528 were rejected; various difficulties were encountered in bleeding the other 328 donors and these were classified as unsuccessful phlebotomies.

TABLE 1. AGE OF VOLUNTEER DONORS  
(Showing the Number in the Various Age Groups)

Age Group	Donors Drawn		Rejected Donors	
	No. in Group	Percent	No. in Group	Percent
17-20 years	5095	88.317	1364	89.267
21-25	481	8.337	114	7.461
26-30	107	1.854	28	1.799
31-35	22	.381	3	.196
36-45	32	.554	2	.131
unknown	32	.554	17	1.112
	5769		1528	

\* From the Blood Bank and Donor Center, U. S. Naval Hospital, San Diego, California.

The opinions or assertions contained herein are the private ones of the writer, and are not to be construed as official or reflecting the views of the Navy Department or the Naval Service at large.



TABLE 2. REJECTED DONORS  
(Showing Cause for Rejection)

Cause for Rejection	Number of Donors	Per- cent
1. Temperature (abnormal)	179	11.71
2. Rubella, recent	156	10.20
3. Malaria, history of	109	7.13
4. Blood pressure, abnormal	102	6.67
5. Hemoglobin, less than 12.3 gm.	96	6.28
6. Pneumonia, recent	88	5.75
7. Hepatitis, history of jaundice	71	4.64
8. Penicillin, recent injection	68	4.45
9. Syncopal, history	62	4.06
10. Tattoo, recent	52	3.40
11. Allergy, history	51	3.34
12. Upper respiratory infection	51	3.34
13. Surgery, recent	42	2.74
14. Blood donations, within 3 months	37	2.42
15. Illness unclassified, recent	34	2.22
16. Multiple causes	30	1.96
17. Rheumatic fever, history	29	1.89
18. Tonsillitis	27	1.76
19. Pulse, abnormal	23	1.50
20. Skin rash	18	1.17
21. Bronchitis	18	1.17
22. Cardiac disease, history	18	1.17
23. Apprehension	16	1.05
24. Immunization, recent	14	0.91
25. Breakfast	13	0.85
26. Lungs, congestion	11	0.72
27. Undulant fever, history	11	0.72
28. Underweight	10	0.65
29. Syphilis, history	9	0.58
30. Convulsions, history	8	0.52
31. Varicella, recent	7	0.45
32. Tuberculosis, history	7	0.45
33. Diabetes, history	6	0.39
34. Syncopal, before bleeding	6	0.39
35. Chest pains	4	0.26
36. Influenza, recent	4	0.26
37. Furuncle	3	0.19
38. Overweight	3	0.19
39. Dizziness, before bleeding	3	0.19
40. Short breath	3	0.19
41. Rocky Mountain Spotted Fever, history	3	0.19
42. Chills	2	0.13
43. Acne	2	0.13
44. Other causes, total	22	

One each of the following: Rubella, diarrhea, osteomyelitis, kidney infection, infectious mononucleosis, post-nasal drip, ringworm, sinusitis, parotiditis, rectal bleeding, fungus infection, infected tooth, infected finger, history of unsuccessful phlebotomies, excessive sunburn, very tired feeling, penicillin reaction, infected lymph nodes, epistaxis,

## AGE OF VOLUNTEER DONORS

The number of individuals in each age group of the donors bled and those rejected is shown in Table 1. Over eighty-eight percent were under 21 years of age and less than 1 percent were over 30 years. Obvious errors in date of birth were noted on the registration card of 32 donors and 17 rejected donors who were classified as "unknown." The age distribution of the unsuccessful phlebotomies was very similar.

## REJECTED DONORS

Since the supply of available donors is adequate, very rigid donor requirements are maintained as shown in Table 2. The primary cause of rejection was an abnormal temperature which occurred in 179 instances. Recent recovery from rubella accounted for 156 rejections while a questionable past history of malaria eliminated 109 volunteers and 102 were disqualified due to an abnormal blood pressure. Ninety-six, or 6.28 percent of donors, were rejected with a hemoglobin of less than 12.3 mg percent. (At present the minimum acceptable hemoglobin requirement is 12.5 mg percent.) The above described five causes accounted for approximately 42 percent of the rejections.

## UNSUCCESSFUL PHLEBOTOMIES

The majority of the unsuccessful bleedings occurred with student technicians. In many instances the donor's veins were small which made it difficult to enter, while with other donors the veins collapsed after the withdrawal of 100-200 ml of blood. These were classified as *misses*, Table 3. Deficient vacuum in the collecting bottle occurred in eight instances. Possible contamination caused by air leaking through the rubber stopper was noted on eight occasions and five phlebotomies were discontinued because of the blood clotting in the tube of the donor set or collecting bottle.

coccidioidosis (past infection), nausea with vomiting and convulsions (prior to phlebotomy).

TABLE 3. UNSUCCESSFUL PHLEBOTOMIES  
(Due to Technical Difficulties)

Obstacle Encountered	Number of Donors
Misses*	306
Deficient Vacuum	8
Contamination of Bottle	8
Clotting of Blood in Bottle	5

\* The majority of these were donors with small veins or veins that collapsed during phlebotomy.

#### SYNCOPE REACTION

Syncope occurred in 248 prospective donors (3.25 percent of all prospective donors), 208 (2.73 percent) cases without the loss of consciousness, and 40 (0.52 percent) with loss of consciousness of a short duration. All these donors returned to their Activity with their company or platoon. Table 4.

#### REPEATED DONATIONS

Previous blood donations were reported by 652 men (11.3 percent) Table 5. The largest group, 336 donors, reported one previous donation. The majority of donors reporting three or more donations were the older men that had been in the Service for many years.

#### DISTRIBUTION OF BLOOD GROUPS

The results of the 5,568 unselected donors show that over 46 percent were Group O,

TABLE 4. SYNCOPE REACTIONS

Degree of Reaction	No. of Donors
Dizziness without loss of consciousness (Before phlebotomy)	3*
Dizziness without loss of consciousness (After phlebotomy)	205
Syncopy, with loss of consciousness (Before phlebotomy)	6*
Syncopy, with loss of consciousness (After phlebotomy)	34

\* Occurred during physical examination or while waiting to be bled.

TABLE 5. BLOOD DONORS REPORTING  
PREVIOUS DONATIONS\*

No. or Previous Donations	No. of Donors in Group
One	336
Two	116
Three	73
Four	44
Five	24
Six	19
Seven	9
Eight	15
Nine	4
Ten	5
Eleven	1
Twelve	2
Fourteen	2
Fifteen	1
Twenty	1
Total	652

\* The rejected donors are not included in these figures.

approximately 38 percent Group A, approximately 11 percent Group B and only 3.5 percent Group AB. More than 81 percent of the Group A donors were A<sub>1</sub>. The Rh<sub>0</sub>-

TABLE 6. DISTRIBUTION OF BLOOD  
GROUPS IN DONORS\*

ABO Group	Rh <sub>0</sub> Factor	No. of Donors	Percent
O	Positive	2250	40.4
O	Negative	389	6.1
A <sub>1</sub>	Positive	1454	26.1
A <sub>1</sub>	Negative	260	4.7
A <sub>2</sub>	Positive	329	5.9
A <sub>2</sub>	Negative	67	1.2
B	Positive	545	9.8
B	Negative	79	1.4
A <sub>1</sub> B	Positive	125	2.2
A <sub>1</sub> B	Negative	16	0.3
A <sub>2</sub> B	Positive	40	0.7
A <sub>2</sub> B	Negative	14	0.3

\* Results of 5568 unselected donors, blood groups unknown prior to bleeding. The other 201 donors drawn during this period were called for specific type of blood, therefore were not included in this table. These results included the various races encountered in the Naval Service.

positive donors comprised 85.2 percent which was less than anticipated, considering that these results included all races.

#### DISCUSSION

Since the majority of volunteer donors bled at this Donor Center are young male donors, it should not be misinterpreted that older male donors or female donors have not volunteered to donate their blood. The younger men are used more frequently because of the advantage of having a large group arrive early in the morning so that the phlebotomies can be completed within a

few hours. Whenever specific blood types were requested the volunteers have been in excess of the requirements.

Since the supply of volunteer donors has been adequate, the rejection rate was great (20 percent). Donors that had breakfast were rejected, and returned with their company or platoon in order that the group could be kept intact.

It is of interest to note that the incidence of syncopal reaction was only 3.25 percent, since over 89 percent of the donors were under 21 years of age and they did not have any breakfast prior to phlebotomy.



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## EDITORIAL

### Sex

**D**ETERMINATION of sex of our offsprings prior to birth has been more or less of a game for ages. All kinds of methods have been devised to ascertain whether a blue or a pink layette should be prepared for the "blessed event."

Now we learn that a sure way has been discovered. By the examination of the amniotic fluid sex can be determined prior to birth. All one needs to do is to get a specimen of the fluid in which the baby is swimming and then look for a certain type of cell with the aid of a microscope. Sounds simple, doesn't it?

Well, to get amniotic fluid is not the simplest procedure it would seem to us. It certainly should not be classed as the safest procedure. The collection of the fluid may be both simple and safe in the hands of the expert but a warning should be issued to those enthusiastic physicians who may want to go ahead "where angels fear to tread." Now this reluctance on the part of some to do such an examination, which includes the collection of the fluid, certainly does not put them in the class of angels. The enthusiasm

of others who do not fear to tread certainly would not put them in the group of the competent persons to carry out the procedure. In that group there are certainly the competent but let us make sure that those individuals are competent before they go ahead.

Anyway why do we want to know the sex of the child before it is born? The uncertainty itself gives months of pleasurable speculation and untold wagers and promises. Do we want to destroy all this? Would this predetermination of sex not cut down on the gifts at the showers for the expectant mothers? Are there not those who might give for boy babies and not for girl babies as well as the other way around? We can not, of course, stand in the way of progress but the expectant parents who say, "We want a boy (or girl) but, of course, we will be happy with either" and then wish hard for their choice for months are truly the happy ones.

There is such a thing as pushing a scientific discovery too far sometimes, and determination of sex before birth of the baby seems to be pressing things too much.

Now aren't we the old foggies?



### PLAN NOW TO ATTEND

The 63rd Annual Convention of the Association of Military Surgeons of the United States at the Hotel Statler, Washington, D.C., November 12, 13, 14, 1956.

## Around the World

By

CLAUDIUS F. MAYER, M.D.

**Z**ULULAND is one of the countries where malaria is endemic at a high rate of incidence. A few years ago certain investigators believed that such malaria-stricken areas are also the homes of the sickle-cell trait. Recent studies of British anthropologists, pathologists, and anatomists proved however that this belief is erroneous. Neither among the Zulus, nor among other malaria-infested people such as the Northern Nilotes in Southern Sudan, or the aborigines in Malaya, is sicklelema particularly at home.

Male homosexual transvestitism has been in existence in India for centuries. In Hyderabad and other cities a class of male sex inverters are known as eunuchs who dress like women and adopt feminine names. One group of them, the Hijirahs, are deprived of their genitals. Another group, the Zenanas, are externally male. A third group of eunuchs, those called Khwajas, were once employed as guards of the harems of palaces.

Ayurveda is a very ancient, highly developed system of native medicine which flourished in India from the 27th century B.C. to the 10th century A.D. In recent years, various efforts have been made to revive the old system that the successive foreign invasions caused to decline. In Jamnagar, there is a Central Institute of Research in Indigenous Systems of Medicine, established as a result of the recommendation of the Chopra Committee (the "Hoover" Committee of India). Various conferences and conventions are also arranged yearly for the benefit of Ayurvedists. The Ayurveda system is based largely on botanical knowledge and the availability of a rich variety of medicinal plants. It is a simple system, using readily obtainable material for cures, and, at present, catering to the needs of nearly 85% of the Indian people.

Most Indian states have a state college for this native medicine, though it is mostly

permeated by "allopathic" doctrines. One of the oldest is the College of Indian Medicine established in 1925 at Mandras. There have been also new Ayurvedic colleges, dispensaries, and hospitals opened in every state of India, and old ones substantially strengthened. Control and standardization of Ayurvedic drugs have been also started. Ayurvedic medical education attempts to combine the basic knowledge of modern western medicine with the ancient indigenous wisdom of healing. Whether the enthusiasm for the revival of Ayurveda will mean a true renaissance in Indian medicine—as they hope in Madras—or whether it burns itself out by writing a few articles in medical magazines, will await the judgement of the next few decades.

Another type of medical renaissance is in the budding in Nigeria. This country is more than three times the size of the United Kingdom, with a population of 30,000,000, and is now a federation of three semi-autonomous regions. Ibadan, the capital of the Western Region, is a great center of learning. The University College has succeeded in capturing something of the atmosphere of a college court at Oxford or Cambridge. The teaching is of the highest standard. A visiting Committee of the British Medical Association could not clearly see, though, whether what is to be taught at Ibadan should be medicine as practiced in London, or medicine in tropical Africa. It is hoped that this great new medical school will not feel itself bound to transplant the Harvey Street practice *in toto* to Africa.

The Ninth World Health Assembly was held at Geneva a few months ago. A decision of particular importance to Moslem people was the abolition of those parts of the International Sanitary Regulations which deal with the Mecca pilgrimage. According to the new decision the pilgrims to Mecca



will be treated in the same way as migrants and seasonal workers elsewhere in periodic mass congregations.

The First International Congress on Medical Ethics assembled almost a year ago, last September in Paris. The ethical use of modern methods of diagnosis and treatment was the main topic of discussion. It was pointed out that some of the modern diagnostic methods and explorations are very audacious, sometimes even dangerous. Doctors who practice these methods must have in themselves a perfect harmony of science, conscience and love of the patient. The sole purpose of any examination should be the welfare of the patient who, having given his free and clear consent, should not be exposed to any foreseeable serious risk. Only those physicians who have the necessary knowledge as experts and who follow their conscience in scientific investigations should undertake any examination of a risky nature.

The Congress also discussed the ethics of surgical interventions. Gravely mutilating operations, such as pelveotomy for cancer, may be justified by the doctor's judgement only. Hibernation for anesthesia has now become a regular procedure in modern cardiac surgery, while other methods (extracorporeal or crossed circulation) are still on trial. Medicine indeed may have to work with several morals. Thus, surgery is neither an art nor a science (in the opinion of Grosset, the orthopedist); hence, surgical ethics cannot be codified, and the surgeon has to take Prudence for his mistress. What does it help if surgical methods are approved by scientific corporations, when their efficiency and value depends entirely upon the skilled hand of the individual man who practices surgery?

What about psychosurgery? Not so long ago we heard the opinion of an American critic who condemned all types of psychosurgery. The USSR also renounced both lobotomy and electroshock therapy. In surgery of such type one can hardly speak, of course, of the patient's consent. Moreover, human psychosurgery should not and cannot

be based upon the results of experimentation on animals. As a supreme ethical guide we might safely follow the ruling of Pope Pius (1954) that it is ethically permissible for a patient to assent to some mutilation of his body if it can be reasonably expected that such mutilation will prevent and/or repair serious and lasting damages.

Problems of medical ethics also arise in the manufacture and distribution of new drugs and vaccines, and in the hormonal and other forms of endocrine therapy. Controlled trials are necessary, of course. The history of B.C.G. vaccination shows what confusion may prevail for long without trial. Even in the British Parliament the question of ethics in clinical investigations was raised on account of reports from several British maternity hospitals where some months ago penicillin was given to newborn babies for the only purpose to observe their reaction to the drug and to establish the properties of the preparation. The search of medical journals also shows that at least in 6-7 other instances children were used as guinea pigs in antibiotics experimentation. In Scotland for instance, 600 children of the Orphan Homes were used in research into a new antituberculosis vaccine, "the vole vaccine," which caused several skin reactions.

All these discussions bring up a much greater problem, that of the adaptation of the medical art to scientific medicine, a problem which has been also the topic of a recent meeting of the French Academy of Medicine. Medical science had a rapid progress during the past half century, but the change from research to everyday practice was difficult for many reasons. One of the greatest difficulties is that scientific medicine has a trend toward specialization while medical practice requires a type of family doctor. But family doctors have not full information on the changing resources that medical science is putting continuously at their disposal. Thus, the art of medicine can never be as effective as one would imply from the scientific advances in medicine.

Japan's first systematic survey of tubercu-

losis was carried out by the Ministry of Health and Welfare of that country in 1953. The preliminary report on this survey was recently published. It revealed that even in the area where tuberculosis had its lowest incidence its rate in the general population was still as high as 3.6%. It was also interesting to see that 68.2% of the affected people had been unaware of their being infected. The survey's methods included tuberculin testing, and miniature radiophotography. Samplings were taken from the entire Japan from Onbestu Town in Hokkaido in the extreme North to Kasasa Town in Kagoshima Prefecture in the extreme South.

Two members of the Orthopedic Division of Kyoto University Medical School recently described the keloids which the Hiroshima bombing caused. These keloids were observed for a year after the bombing; some developed 2 years after the attack. Out of 199 people who were burnt in the atomic explosion 177 (or 87%) developed keloids. As time goes by, the keloids begin to shrink. Some of them reappeared after their surgical removal. Atomic keloids do not differ histologically from other types of keloids.

During the Australasian Medical Congress of last year, a physician of New South Wales revealed some interesting statistics on the rate of venereal infection in the Australian Occupation Force in Japan (1946-47). Within a few weeks of the arrival of Australian troops in Japan in 1946 the rate of infection with V.D. was 700 per 1,000 per annum, the highest published figures on record. No wonder, since these troops were encamped right in the center of a huge red-light area with 100% infection among the prostitutes. Stringent rules, heavy penalties, control of contacts, and prophylactic ablution centers reduced the infection rate to 120 per 1,000 per annum. (Apparently it was of no use to bring up moral arguments against extramarital sex life and simultaneously to teach the technics and practice of how to prevent venereal infections.)

The Biochemical Department of the Nobel Institute of Medicine at Stockholm has

been the Mecca of biochemists since 1935. The head of this famous institution is Hugo Theorell, Swedish biochemist, pupil of Hammarston, and winner of last year's Nobel Prize. Theorell is the outstanding authority on enzymes. He succeeded in isolating the first of the yellow enzymes of oxidaiton in a crystallized form. Along side of his serious studies, he still finds time for his musical hobby, playing several string instruments, and sometimes presiding at the meetings of two Swedish orchestral societies.

A Canadian doctor (J. Todd) detected a peculiar nervous syndrome associated with migraine. He called it the Alice-in-Wonderland Syndrome. It is characterized by the occurrence of various illusions which the patient experiences in reference to sizes, distance or positions of stationary objects. There are also illusions which such a patient feels in reference to the passage of time, or he may have the feeling of levitation. Such illusions may appear with or without the headache in the migrainous patient. The doctor believes that Mr. Lewis Carrol, creator of the famous story, himself was a sufferer of migrainous attacks.

The summer brings various seasonal diseases. In Queensland, for instance, furunculosis is very frequent at summertime, especially in males, and it amounts to a serious industrial and medical problem. It was found there that penicillin shots are not a cure against furunculosis; indeed, they help to develop them in new crops.

Europeans may suffer just as much from the summer heat as ourselves. British authorities advised that an average man of 70 Kg will not lose more than 100 grams of sweat per hour at night in bed. At midday, indoors the sweat loss is up to 250 g/h; in light shade, a man, resting outside, will sweat 500 g/h. The sweat rate is generally proportional to  $\frac{2}{3}$  power of the body weight. Exercise may increase sweating up to 1,000 g/h, but this is so excessive that it cannot be sustained for a long time. A moderately active man may lose about 5 liters of sweat, or twice as much, on a hot day.

The British rule is to drink enough water to maintain about one liter of urine per day. The salt loss is not too much, approximately 0.15 to 0.3%. The normal European diet gives 10 g salt per day, or more. Hence, there is little need in Europe for extra salt, especially for the uncoated variety of salt tablets which may be insoluble and may set up gastritis.

As an example of the working of mind an Australian psychiatrist recently related the following test. During the course of his military training, the students' section was re-

ceiving instruction in the field on the transmission of messages by word of mouth. The trainees were placed at intervals around a large circle. The commanding officer, for reasons of interest or perhaps amusement, gave the student, the first member in the relay, the written message: "*Aum mani padme hum*," the words of a famous Tibetan prayer. He read it out to the next man, and—in due course—the last one in the relay repeated to the officer: "How many of this party come?" . . . . . *Multa Paucis!*



#### SOMETHING CAN BE DONE!

More than a million American lives have been sacrificed on roads and streets since the advent of the automobile, and the end is not in sight.

But after 50 years of indifference, ineptitude, and hit and miss trial and error, America is beginning to show progress in applying proven techniques of accident reduction—safer roads, safer vehicles, realistic traffic laws, effective law enforcement, stricter driver licensing, sound traffic engineering, teaching the art and science of safe driving, systematic public information and sustained citizen support.

Something *can* be done about it! Let's do it—and faster!—*Bulletin*, Am. Assoc. Motor Vehicle Administrators.

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## ASSOCIATION NOTES

Timely items of general interest are accepted for these columns. Deadline is 3rd of month preceding month of issue.

### Department of Defense

*Ass't Secretary (Health & Medical)*—HON.

FRANK B. BERRY, M.D.

*Deputy Ass't Sec'y*—HON. EDW. H. CUSHING, M. D.

#### DRAFT CALL FOR AUGUST

The Department of Defense has requested the Selective Service System to provide the Army with 13,000 men during August. The Navy, Marine Corps, and Air Force have not requested any men for that month.

### Army

*Surgeon General*—MAJ. GEN. SILAS B. HAYS

*Deputy Surg. Gen.*—MAJ. GEN. JAMES P. COONEY

#### SGO ASSIGNMENT

Colonel James H. Forsee, MC, who has just recently returned from a tour of duty in the Far East, has been assigned the dual responsibility as assistant chief of the Professional Division, and Chief Surgical Consultant in the Office of the Surgeon General.

Colonel Forsee is author of the book *The Surgery of Pulmonary Tuberculosis* and many medical articles.

Lt. Colonel Edwin H. Smith, Jr., DC, has been assigned as assistant chief of the Dental Career Guidance and Assignment Section in the Office of the Surgeon General.

Lt. Colonel Eugene J. Mullaghy, MSC,

has assumed the duties of chief of the Technical Liaison Office to succeed Lt. Colonel Lawrence G. Alexander who has been transferred to Brooke Army Medical Center, Fort Sam Houston, Texas.

Colonel Mullaghy has been in the Technical Liaison Office since 1953. Newcomers to that office are Major William V. Davis, MSC, and Captain Cordelia Myers, AMSC.

#### NAT'L BUR. STANDARDS ASSIGNMENT

Lt. Colonel Hubert W. Merchant, DC, has assumed his duty as Army Dental Corps officer in the dental research section, Organic and Fibrous Materials Division, National Bureau of Standards. He is assigned to the Walter Reed Army Institute of Research, Walter Reed Army Medical Center.

#### HIGHEST ARMY CIVILIAN AWARD

Dr. Stanhope Bayne-Jones, Technical Director of Research, Office of the Surgeon General of the Army, was given the Decoration for Exceptional Civilian Service, the highest Army civilian Award.

The award was presented to Dr. Bayne-Jones by Brig. General John R. Wood on behalf of the Surgeon General. The text of the citation reads, "For exceptional performance of duty as President of the Army Epidemiological Board, Consultant-at-large to the Medical Department, United States Army, and Technical Director of Research, Research and Development Board and Division, Office of the Surgeon General, Department of the Army, from 3 July to 1 June 1956. His able and inspiring technical leadership in the field of military medical research has aided immeasurably in the attainment of solutions to complex and vexing problems concerned with conservation of fighting strength and reflects great credit to himself and the Army Establishment."



At the graduation exercises at Tulane University in May, Dr. Bayne-Jones received the honorary doctor of laws degree. He delivered the graduation address, speaking on "The Liberal Sciences."

#### GENERAL GORBY HONORED

The Médaille D'Honneur Du Service De Santé Militaire of France was presented to Major General Alvin L. Gorby, MC, U. S. Army at a recent medical conference in Paris. The presentation was made by Major General A. J. Reilinger, Director General of the French Medical Service.

General Gorby is Surgeon of the U. S. Army, Europe, with headquarters in Heidelberg.

#### SKINNER MEDAL



U. S. Army Photo

Brig. General Elbert DeCoursey (left), Commandant of the Army Medical Service School, is shown above presenting the Skinner Medal and certificate to Captain Spencer Walton, Buffalo, Wyo., top ranking medical officer in the basic class for career medical men. Captain Walton has been assigned to Madigan Army Hospital, Tacoma, Wash.

#### GRADUATES BAMC

Major Ralph G. LeMoon, MSC, and instructor in the Department of administration, Army Medical Service School, was granted a Master's degree in Hospital Administration from Baylor University in Waco, Texas.

Major Edwin S. Marsh received his B.A.

in history magna cum laude, and Captain Ernest J. Vogelgesang, received his B.A. in English magna cum laude, both from St. Mary's University. Major Marsh will attend the course in Hospital Administration at the Army Medical Service School; Captain Vogelgesang has been transferred to Germany.

#### HOSPITAL ADMINISTRATION COURSE ASSIGNMENT

Major Ann E. Hogan, NC, who has been in the Office of the Surgeon General, has been assigned to the nine-months hospital administration course (affiliated with Baylor University) at the Army Medical Service School, Fort Sam Houston, Texas.

#### NEW OFFICERS FOR AMSC

Fifty recent graduates who have been selected for commissions as second lieutenants in the Army Medical Specialist Corps will report to the Army Medical Service School at Brooke Army Medical Center, Fort Sam Houston, Texas, on August 15 for a month Orientation Course. These new officers are dietitians, physical therapists and occupational therapists and after the course at Fort Sam Houston they will be sent to stations for training. Comprising the group of fifty are 19 dietitians, 19 physical therapists, and 12 occupational therapists.

#### NEW BROCHURE FOR RESERVE OFFICERS

*Today's Decision, Tomorrow's Reward* is the title of a new brochure which describes the opportunities and the need for nurses and medical specialists in the Army Reserve. The brochure is available from the Office of the Surgeon General of the Army, and also from the Office of the Surgeon of each Army Headquarters.

#### NURSING THESIS PUBLISHED

*The Training Function in Nursing Service* is the title of a thesis by Captain Phyllis M. Loucks, ANC, Fort Belvoir, Va., for the M.A. degree awarded her by George Washington University.

In this thesis Captain Loucks sets forth the need for a revision in the training methods and concepts in schools of Nursing throughout the country.

The thesis has been published by the National League for Nursing for distribution through the League Exchange.

#### NURSE DISCUSSANT AT AHA

Major Elizabeth L. Breitung, ANC, Office of the Surgeon General, will be a participant in the discussions on staffing at the American Hospital Association's convention in Chicago, September 17-20.

The round table discussion will be held on September 18 with Marian L. Fox, nationally known nursing specialist acting as coordinator.

#### RETIRED

Brig. General Mack M. Green, MC, was retired on June 30 after more than 31 years of active service.

At the time of his retirement General Green was Commanding General of Valley Forge Army Hospital. That position is now filled by Brig. General Sam Seely who recently returned from an assignment in Europe.

#### OUTSTANDING OFFICER PROMOTION

Zones of consideration and percentages have been set up for the promotion of outstanding officers of the Army without consideration of the promotion list. For promotion to colonel a lieutenant colonel must have served in grade for five years; to lieutenant colonel a major must have served in grade for four years; and to major a captain must have served in grade for three years.

Recommendations from the field will not be considered. The selection will be based on ratings already available in the files at the Department of Army.

#### RESERVE TRAINING COURSE

The six-month Army Reserve Training Course is becoming increasingly popular for those young men in the 17-18½ age

group. Through the Reserve Forces Act of 1955 it is possible for these young men to meet their obligation to their country by six months active duty and 7½ years of participation in the Ready Reserve which entails participation in a local Reserve unit.

As of June 14 there were 24,950 young men in the program.

#### NEW INSTALLATION

Walters Air Force Base, Mineral Wells, Texas, has been transferred to the Department of the Army for use as a helicopter student training center. It is planned that there will be about 600 persons trained annually.

#### FOOD IRRADIATION CENTER

A pilot plant for the irradiation of food, a newly proposed method for its preservation, will be completed by October 1958. The plant, the location of which has not been decided upon, is to have a peak capacity of 1,000 tons of food per month.

Since the Army Quartermaster Corps has responsibility for the procurement of food for the military forces according to the single manager plan prescribed by the Secretary of Defense, that Corps will have direct supervision of the plant.

Tests have demonstrated that the storage life of many perishable foods may be extended up to three months and longer without refrigeration. Many foods are not noticeably affected by radiation. In some cases, however, the color, odor, or flavor of some types of foods are adversely affected. Progress is being made in overcoming these effects.

Research thus far conducted under the direction of the Army Medical Service indicates that radiation preservation does not detract from the wholesomeness or nutritional value of food items and does not make the food radioactive.

## Navy

Surgeon General—REAR ADM. BARTHOLOMEW W. HOGAN

*Deputy Surgeon General*—REAR ADMIRAL  
BRUCE E. BRADLEY

SURGEON GENERAL TO PERU

Rear Admiral Hogan attended the inauguration ceremonies of the new Peruvian Medical Center at Lima, Peru, on July 4. The new medical center there is modeled after the Naval Hospital at Beaufort, S.C.

AMA PRESIDENT

Dr. Dwight Harrison Murray, Civilian Consultant to the Surgeon General of the Navy, has assumed the office of president of the American Medical Association. He is chairman of the department of general practice, Parks Victory Memorial Hospital, Napa, Calif.

DOCTOR OF SCIENCE DEGREE

Captain Charles F. Gell, MC, USN, recently received the degree of Doctor of Science (Med.) from the University of Pennsylvania for graduate work in Physiology.

Captain Gell has been associated with the University of Pennsylvania for the past seven years in the capacity of lecturer in Aviation Physiology in the Graduate School of Medicine and Assistant Professor of Physiology in the School of Medicine. He has been a Medical Officer in the Navy for the past 20 years during which time he has been a frequent contributor to scientific literature.

PROMOTION EXAMINATION

Naval Reserve Officers of the Medical Department have been advised of a plan for the determination of professional fitness for promotion by means of written examinations or the completion of specified courses of instruction in lieu of the examinations.

The plan is designed to stimulate the professional growth of officers, as well as to insure that officers promoted are well qualified to perform all duties of their new grade.

GRADUATES IN HOSPITAL ADMINISTRATION

The Seventeenth Officer's Class of the U.

S. Naval School of Hospital Administration had 26 officers of the Medical Service Corps of the Navy and ten Air Force Medical Service Corps. The graduation address was delivered by Mr. James A. Hamilton, Professor of Hospital Administration, University of Minnesota. Commander Charles L. Crawford is the Commanding Officer of the School.

RETIRED

LCDR Oscar C. Tack, MSC, was retired on July 1 after serving more than 32 years of active service. He will reside at 1100 Bay Ridge Ave., Annapolis, Md.

NEW HOSPITAL

Rear Admiral French R. Moore, MC, and Commander Arthur P. Daul, MSC, of the Bureau of Medicine and Surgery attended the Ground Breaking Ceremony held at the U. S. Naval Hospital, Portsmouth, Va., on June 20. The new hospital will contain 800 beds and cost approximately \$13,000,000.

POLIO VACCINE

Administration of poliomyelitis vaccine during an outbreak of the disease can apparently be accomplished without any untoward effects. That was the announcement by the Surgeon General of the Navy, it was based on the observations made in the fall of 1955 in Hawaii.

A voluntary program involving 26,000 children and adults was carried out, and it was found that there were no harmful effects from the administration of the vaccine.

## Air Force

*Surgeon General*—MAJ. GEN. DAN C. OGLE  
*Deputy Surg. Gen.*—MAJ. GEN. W. H. POWELL, JR.

HONORED

During a recent medical conference at the Supreme Headquarters, Allied Powers, Europe, General Dan C. Ogle, Surgeon General



Official SHAPE Photo

of the U. S. Air Force (left) was honored with the Médaille D'Honneur Du Service De Santé De L'Air of France. Presentation was made by Major General A. J. Reilinger, Director General, French Military Medical Services.

A similar honor was bestowed upon Brig. General Wilford F. Hall, USAF (MC), Chief Medical Officer, SHAPE.

#### COMMANDANT AVIATION MEDICAL SCHOOL



U. S. Air Force Photo

Brig. General Otis O. Benson, Jr., has been assigned again as Commandant of the School of Aviation Medicine of the Air Force. This assignment at the Randolph Air Force Base in Texas is the same position

which General Benson held for four years which were concluded in 1953 with his assignment to the Office of the Surgeon General of the Air Force in Washington. Since the unexpected death of General Kendricks last February, who was at that time Commandant of the School, the Acting Commandant has been Colonel John R. McGraw.

General Benson will be in close touch with the new construction planned for the School at Brooks Air Force Base, 17 miles southwest of Randolph Air Force Base. Recent approval has been given for approximately \$9,000,000 for the new headquarters for the School.

#### CHIEF NURSE



U. S. Air Force Photo

Colonel Frances I. Lay, USAF (AFNC), has been appointed as the second Chief of the Air Force Nurse Corps, succeeding Colonel Verena M. Zeller, who has been Chief of that Corps since 1951.

Colonel Lay is a native of South Carolina and a graduate of the General Hospital School of Nursing, Greenville, S.C. She holds a Bachelors degree in Nursing Education from the University of Minnesota. In 1948 she completed the Flight Nurses Course at Randolph Field. During World War II Colonel Lay was Chief Nurse of the 160th General Hospital in England.

NEW CHIEF SPECIALIST CORPS



U. S. Air Force Photo

Colonel Audrey A. Underkofler, USAF (MSPC), was appointed Chief of the Medical Specialist Corps, Air Force Medical Service, effective July 1. She succeeds Colonel Miriam E. Perry who recently retired.

Colonel Underkofler holds a B.A. Degree from Iowa State Teachers College and the M.S. Degree in Physical Education from the University of Iowa. She completed the course in Physical Therapy at Walter Reed Army Hospital in 1943 and served in Army Hospitals, including overseas service in the European Theater, during World War II. From 1946 to 1952 she was Chief Physical Therapist in Air Force Hospitals. She was then appointed Assistant Chief of the Air Force Women's Medical Specialist Corps and Chief of the Physical Therapy section, Office of the Surgeon General, with rank of Lt. Colonel, serving in this capacity until December 1954. Since that time she has been Consultant to the Surgeon, Headquarters Air Training Command and Chief Physical Therapist at the USAF Hospital, Scott Air Force Base, Illinois.

RETIRED

Colonel Verena M. Zeller, USAF (AFNC), was retired from the military

service on July 1 after 20 years service. At the time of her retirement she was Chief Nurse of the Air Force.

Colonel Zeller was commissioned in the Army Nurse Corps at Fort Riley, Kansas in 1936 and transferred to the Air Force Medical Service in 1949. For the present she will make her home in Washington, D.C.

Colonel Miriam E. Perry, USAF (MSPC), retired on July 1. She has been affiliated with the military service since 1931 when she was graduated from the Army School of Dietetics at Walter Reed Army Hospital. She transferred to the Air Force Medical Service in 1949. For the time being she will remain in Washington, D.C.

NURSES SELECTED FOR COURSE

Fifteen Air Force nurses have been selected to attend the course in Nursing Administration at the Army Medical Service School. Those reporting in September are: Major Genevieve J. Thompson, Captains Martha Carle, June M. Mady, Ruth C. Miedwig, Sara P. Rainey, Winnie B. Sanders, Glenna P. Tippet, Irene Wiley. Those who will attend the January class will be: Captains Josephine M. Becker, Eleanor E. Bernick, Opal G. Davis, Norma Nordstrom, Katherine G. Simpson, Harriet E. Stephens, Otilia M. Ulrich.

ASSIGNMENT

Colonel John R. McGraw, who has been Acting Commandant of the School of Aviation Medicine, Randolph Air Force Base, Texas, has been assigned as Surgeon of the Twelfth Air Force in Germany.

Public Health Service

*Surgeon General*—(To be appointed)

*Deputy Surg. Gen.*—W PALMER DEERING, M.D.

DR. SCHEELE RESIGNS

Dr. Leonard A. Scheele, who was in April appointed to his third term as Surgeon Gen-



eral of the United States Public Health Service, resigned effective August 1. He will become president of Warner-Chilcott Laboratories.

During his terms of office Dr. Scheele had been an ardent proponent of medical research. The Public Health Service during the next fiscal year will receive more appropriated money than ever before for carrying on research in the various fields of medicine.

As president of the Association of Military Surgeons of the United States during 1954 his outstanding abilities were ever evident. His very active participation in all matters of the Association made that year a notable one for our organization. We wish for Dr. Scheele a long successful career in his new field.

#### RESEARCH APPROPRIATION

Final figures for the medical research work of the National Institutes of Health have been set at \$170,400,000. This is a record and is about 80% more than the amount for the past fiscal year.

Here are the figures: (Italics are those for past year)

National Cancer Institute—	
\$48,400,000	(\$24,828,000)
Mental Health Activities—	
35,100,000	( 18,000,000)
National Heart Institute—	
33,300,000	( 18,778,000)
Arthritis & Metabolic Diseases—	
15,800,000	( 10,740,000)
Neurology & Blindness—	
18,600,000	( 9,861,000)
Allergy & Infectious Diseases—	
13,200,000	( 7,580,000)
Dental Health Activities—	
6,026,000	( 2,136,000)

#### HEPATITIS

The incidence of infectious and serum hepatitis continues to remain at a low figure compared to that of the past several years. When looking back only a few years ago at the morbidity figures it is gratifying to read

the present lowered rate. However, this is no place to stop. Every effort should be made to continue in the search for the cause, to reduce the incidence of the disease, and to recognize the presence of the disease early and institute treatment.

#### POLIOMYELITIS CASES

For the six months ending June 30 there were 2,654 cases of poliomyelitis reported in the United States. For the same period in 1955 there were 3,706 cases reported. The Pacific Coast states are showing a greater incidence of the disease this year than they did last year.

#### POLIO VACCINE

The Public Health Service has recommended that poliomyelitis vaccine be given to all those under 20 years of age and to all pregnant women. The step-up in vaccine production by the pharmaceutical houses should make ample supplies available in a short time.

#### SICKNESS SURVEY

Under a law just passed the Public Health Service will be required to conduct special periodic surveys of the illness and disability among the U. S. population.

#### NEPHROSIS

Hydrocortisone or prednisone is of value in the treatment of nephrosis according to the work of Drs. Howard C. Goodman, James H. Baxter, Hans Kietel, and Jack Orloff of the National Institutes of Health.

Eighteen nephrotic patients were treated with either hydrocortisone or prednisone for one to two months. Fourteen of the patients responded favorably, and though four years later relapsed further steroid therapy has again led to relief of their symptoms.

For the full account of this story see the April issue of *Journal Clinical Research Proceedings*.

#### HEART DISEASE PUBLICATION

*Selected References on Cardiovascular*

*Disease* is the title of a new 52-page booklet recently published as Public Health Service Publication No. 472. This is a bibliography which is arranged in sections according to major interests, such as Rehabilitation, Emotional Aspects, and Patient Education. Copies may be obtained from the Superintendent of Documents, Government Printing Office, Washington 25, D.C., for 25¢ each.

## Veterans Administration

*Chief Medical Director*—WILLIAM S. MIDDLETON, M.D.

*Deputy Chief Med. Dir.*—R. A. WOLFORD, M.D.

### ASSIGNMENTS

Dr. Jackson H. Friedlander has been appointed manager of the VA hospital at Big Springs, Tex. He has been chief of the residency and internship program at the central office in Washington.

Ira G. Sims who has been manager of the hospital at Big Springs, Texas has been reassigned to the VA center at Whipple, Arizona.

John D. Bosler has been appointed as manager of the VA hospital at Syracuse, N.Y. He replaces Dr. George O. Pratt who has resigned.

### DR. LYON HONORED

Dr. George M. Lyon, Manager of the Veterans Hospital, Huntington, West Virginia, received the honorary Doctor of Science degree from his alma mater, Denison University, Granville, Ohio, in June. The honor was bestowed upon him for his work in atomic medicine.

### MULTIPLE SCLEROSIS

Isoniazid which has been found useful in the treatment of tuberculosis has no beneficial effect on multiple sclerosis. This is the conclusion reached after a two-year clinical investigation by the Veterans Administration. The report was made to the American Neurological Association by Dr. Benedict

Nagler, Chief of the Neurology Service of the Veterans Administration.

### MECHANICAL HEART-LUNG

Dr. Frank Gollan, Thayer Veterans Administration Hospital, Nashville, Tenn., exhibited his mechanical heart and lung at the A.M.A. Convention in Chicago. This machine has recently been placed on the market.

## Miscellaneous

### ANNUAL REPORT

The Federal Civil Defense Administration Annual Report for 1955 is now available from the Superintendent of Documents, U. S. Government Printing Office, Washington 25, D.C., for the price of \$1.00.

This Report is in the form of a 215 page printed booklet. It should be in the files of every organization having anything to do with civil defense.

### UROLOGY AWARD

The American Urological Association offers an annual award of \$1000 (first prize of \$500, second prize of \$300 and third prize \$200) for essays on the result of some clinical or laboratory research in Urology. Competition shall be limited to urologists who have been graduated not more than ten years, and to hospital interns and residents doing research work in Urology.

The first prize essay will appear on the program of the forthcoming meeting of the American Urological Association, to be held at the Hotel William Penn, Pittsburgh, Pa., May 6-9, 1957.

Full particulars may be obtained by addressing the Executive Secretary, 1120 North Charles Street, Baltimore, Md. All essays must be in his hands before December 1, 1956.

### ELECTRONICS SHOW

The Western Electronic Show and Convention will be held at Los Angeles, August 21-24. In the Pan Pacific Auditorium there will be exhibits from 650 firms many of

which will be related to the field of medicine and health. Headquarters for the convention will be at the Ambassador Hotel.

#### MEETING

The 21st Annual Congress of the United States and Canadian Sections, International College of Surgeons, will be held in the Palmer House, Chicago, September 9-13. Further information may be obtained by addressing the Secretariat, 1516 Lake Shore Drive, Chicago 10, Illinois.

#### FHIA ASSOCIATION MEETING

A breakfast meeting of the Federal Hospital Institute Alumni Association will be the Palmer House. Tickets are \$3.25. The guest speaker will be Dr. Frank B. Berry, Assistant Secretary of Defense (Health & Medical).

#### CHEST DISEASE PG COURSES

Two postgraduates courses will be sponsored by the American College of Chest Physicians this fall: 11th Annual Postgraduate Course, Chicago, Hotel Knickerbocker, October 15-19; and the 9th Annual Postgraduate Course, New York, Park-Sheraton Hotel, November 12-16. Tuition is \$75. For further information address: Executive Director, 112 East Chestnut St., Chicago 11, Ill.

#### AVIATION MEDICINE COURSES

A course in Aviation Medicine will be held at the University of California, Los Angeles, October 24, 25, and 26. Fee \$50. Further information may be obtained by addressing: Thomas H. Sternberg, M.D., Ass't Dean for Postgraduate Medical Education, University of California Medical Center, Los Angeles 24, California.

#### FILMS

*Preparing for Surgery* is a new medical film which is available for showing at medical schools throughout the country. Applications should be addressed to the Motion Picture Dep't., Winthrop Laboratories, 1450 Broadway, New York 18, N.Y.

*Resuscitation for Cardiac Arrest* is a new medical film which is available for showing. The film has been produced in cooperation with the Cleveland Area Heart Society under the sponsorship of E. R. Squibb & Sons. Medical groups may obtain the use of the film by writing to Squibb, 745 Fifth Ave., New York 22, N.Y.

#### NARCOTICS

Americans are spending \$600,000 a day for narcotics. There are 60,000 drug addicts in the U.S., each spending about \$10 a day for the drugs.—Harry J. Anslinger, Narcotics Commissioner.

#### NARCOTICS BILL

It is hoped that by the time this item is published Congress will have taken definite steps to stiffen the penalties attached to narcotics peddling. The proposed death penalty for the sale of heroin to minors is not too severe in our thinking. The possession of any narcotics by unlicensed persons, or those who have not obtained them on prescription should be severely dealt with by our courts. Until the American people demand such action we can expect a continuation of the narcotic smugglers and the big dope ring operators, not to mention the small time handler.

#### REHABILITATION MONOGRAPH

*Activities of Daily Living* will be of particular interest to those in the field of rehabilitation. This is a 59-page booklet which is available for \$1.00 from the Institute of Physical Medicine and Rehabilitation, 400 East 34th St., New York 16, N.Y.

#### CARDIOLOGY TRANSACTIONS

*Transactions of the American College of Cardiology*, Vol. VI No. 1 (1956) is a 173 page paper back book covering the Fourth Interim Meeting of November 10-12, 1955. This will be of interest to those interested in the subject of cardiology. The Office of the Publications Committee is Empire State Building, New York 1, N.Y.

BACTERIOLOGY GUIDE WHEEL

A *Medical Bacteriology Guide* wheel has been devised by the Laboratory Service, Fitzsimons Army Hospital, Major C. D. Graber, MSC, Bacteriologist; and Colonel H. A. Van Auken, MC, Chief of Service. This wheel gives the reaction of 48 bacteria to various media and tests by simply turning the wheel to the bacterium listed on the outer circle.

The wheels are available gratis by addressing Parke, Davis & Co., (Attn: Mr. Don Swanson); or Difco Co., (Attn: Mr. William Schoenlein). Both companies are in Detroit, Michigan.

MERCK MANUAL

The new Ninth Edition of *The Merck Manual* will be published this fall. Orders are being received until September 1 at the prepublication price of \$6.00. The price after that time will be \$6.75. Orders may be placed with the Publications Department, Merck & Co., Inc., Rahway, New Jersey.

PENSIONS

"According to latest count, more than 14 million persons 65 years of age or over regularly receive pensions under either public or private plans—twice the number of folks 65 or over who received pensions in 1950." —*Forbes*.

LITERARY TASTE

"The Book-Lovers Club had its first fall get-together with the husbands of the members at dinner Thursday evening. Following the dinner the group went to the home of a member to watch television." —*Mankato* (Minn.) *Free Press*.

AUTOMOBILE SAFETY

Automotive safety engineers say the safety advantage of keeping car doors locked "is so simple and apparent, many motorists may be overlooking it." In recent proving ground tests, cars were deliberately rolled at highway speeds. Not a single door opened

when locked from the inside.—*Automobile Facts*.

TO JAIL

In the Central American country of San Salvador, a motorist who injures a person in an accident in which the driver is at fault must stay in jail until his victim recovers.—*Bulletin, Am. Assoc. Motor Vehicle Administrators*

SOMETHING NEW

A *multifilament stainless steel suture* and a *stainless steel foundation wire mesh* have been introduced for reconstructive surgery. The suture is made of several strands of wire twisted together. Both products are claimed to be non-irritating and non-electrolytic.

*Ear plugs* for industrial and military use to reduce noise to a safe level for personnel.

NEW PLANT IN BRAZIL

The Becton, Dickinson and Company has opened a new plant at Juiz de Fora. This will be known as Becton, Dickinson Industrias Cirurgicas S.A. The city of Juiz de Fora just celebrated its 100 anniversary; it lies about 80 miles north of Rio de Janeiro.

ARMY HISTORY

*The China-Burma-India Theater: Stilwell's Command Problems* is the title of a recently published book which deals with that theater of operations during World War II. This new volume may be purchased from the Superintendent of Documents, Government Printing Office, Washington 25, D.C., for \$6.25.

RADIO ARLINGTON CLOSES

*NAA* were the call letters of the famous Arlington radio station of the Navy. The station was commissioned in 1913 and was the most powerful radio station in the world. The station has played an important part in the history of the Navy. To many amateur radio operators of the second decade of the twentieth century the station will be re-

membered as the one that sent out the time signals, which were relied upon by those who needed split-second correct time. It was always a thrill to pick up this station on the old crystal detector. The first transoceanic radiotelephone system ever set up, in 1915, was between Radio Arlington and the Eiffel Tower, France. Disestablishment of the station was ordered for July 1. Ceremonies honoring Radio Arlington were held on July 14 at the site of the original radio station.

## Honor Roll

Since the publication of our last list, the following sponsored one or more applicants for membership in the Association:

Lt. Col. Wilber H. Arnberg, MSC, U. S. Army  
Major Evelyn Bedard, USAF (NC)  
Brig. Gen. John F. Bohlender, MC, U. S. Army  
Surg. John M. Buchness, USPHS

Capt. R. F. Carmody, (MC), U. S. Navy  
Med. Dir. John W. Cronin, USPHS  
Rear Adm. W. Dana, (MC), U. S. Navy  
Maj. Gen. Alvin L. Gorby, MC, U. S. Army  
Cdr. Mary C. Grimes, (NC), U. S. Navy  
I. Hanenson, M.D.  
Lt. M. Joe Hardwick, MSC, USNR  
Col. W. C. Knott, MC, U. S. Army  
Benjamin E. Konwaler, M.D.  
Col. G. E. Ledfors, U. S. Army, Ret.  
Major Wm. H. Lockward, MC, CAP  
Col. William Look, USAF (MC)  
Capt. Julian Love, (MC), U. S. Navy  
Capt. C. F. Morrison, (MC), U. S. Navy  
Major D. E. Patterson, USAR, Ret.  
Major Alipio Pernet, MC, Brazilian AF  
Lt. A. N. Silvetti, MC, USNR  
Major Gerald O. Stubenrauch, MC, USAR  
Brig. Gen. H. H. Twitchell, USAF (MC)  
Capt. O. E. Van Der Aue, (MC), U. S. Navy  
Col. A. Vickoren, MC, U. S. Army  
Col. Edward R. Wernitznig, MC, U. S. Army



## Late News

Brig. General John R. Wood, MC, Director of the Walter Reed Army Institute of Research, retired on July 31. General Wood will become Director of the Research Laboratories of the Burroughs, Wellcome & Co., U.S.A. (Inc.) of Scarsdale, New York. He will be a vice-president of that company.

Colonel Hugh R. Gilmore, Jr., Curator of the Armed Forces Medical Museum, recently retired from the Army.

The narcotics bill mentioned on page 140

has now become law. Death penalties may be recommended under this law.

The Survivor Benefits Bill (HR 7089) which will bring all service personnel under contributory Social Security has been sent to the White House for the President's signature.

Doctors of osteopathy may be commissioned in the medical services of the Army, Navy, and Air Force under HR 483 which has been sent to the President.



## O B I T U A R I E S

### Capt. Robert G. Heiner, U. S. Navy, Ret.

Robert Graham Heiner, Captain, U. S. Navy, Retired, died at the U. S. Naval Hospital, Bethesda, Maryland on June 7 at the age of 79.

Captain Heiner was a native of South Dakota. He received his medical degree from the University of Virginia in 1900. On January 15, 1904 he was appointed an Assistant Surgeon in the Navy and served for 35 years, being retired as a Captain in the Medical Corps on September 1, 1939. Later he was recalled to active duty and served as Medical Officer in the 5th Naval District from 1943 to 1945.

He was the author of a textbook for the Department of Hygiene, U. S. Naval Academy. This book was used by the Academy from 1916-1935. He was a Fellow of the American College of Surgeons.

Surviving Captain Heiner is his wife, Maria D. Heiner, 2822 University Terrace, N.W., Washington, D.C., and his daughter, Mrs. Mary H. Urguhart.

Interment was at U. S. Naval Academy Cemetery, Annapolis, Maryland.

### Col. Allen C. Wight, U. S. Army, Ret.

Allen C. Wight, Colonel, U. S. Army, Retired, died at Walter Reed Army Hospital on June 17 at the age of 65.

Colonel Wight was a native of Ohio. He received the degree of doctor of veterinary medicine from Ohio State University in 1912. In 1917 he was commissioned in the Regular Army Veterinary Corps. During World War I he served with the American Expeditionary Force in France, and during World War II he was Chief Veterinarian of the Eighth Service Command. From 1930-

1934 Colonel Wight was an instructor at the Army Medical School which was then located at the Walter Reed Army Medical Center. He was retired by reason of physical disability on March 31, 1950.

Colonel Wight is survived by his wife who lives at 149 Mayfair Blvd., Columbus, Ohio; two sons, and one daughter.

Interment was at Arlington National Cemetery.

### Col. A. C. Christie, U. S. Army, Ret.

Arthur Carlisle Christie, Colonel, U. S. Army Reserve, Retired, died at Jacksonville, Florida on June 22 at the age of 76.

Colonel Christie was a native of Pennsylvania. He received his medical degree from the Cleveland College of Physicians and Surgeons in 1904. In 1906 he entered the Army Medical Corps. He was one of the very early students in the field of x-ray, and said he "became a radiologist by order of the Surgeon General of the Army." In that field he became a world authority and a prolific writer. After World War I he resigned from the Army and entered private practice with Dr. Thomas Groover of Washington, D.C. A prominent clinic, The Groover, Christie, and Merritt Radiological Clinic, grew out of this association.

Dr. Christie was a past president of the American Roentgen Ray Society, the American Board of Radiology, the American College of Radiology, and the District of Columbia Medical Society. In February 1953, he was awarded the Gold Medal of the American College of Radiology of which he was a fellow. He was a life Member of the Association of Military Surgeons of the United States.

He is survived by his widow, Maude, of Crescent City, Fla., two daughters and a son.

## BOOK REVIEWS

**SURGERY IN WORLD WAR II—VASCULAR SURGERY.** U. S. Army Medical Dep't. History. Edited by Daniel C. Elkin, M.D., and Michael DeBakey, M.D.; Col. John B. Coates, Jr., Editor-in-Chief. 465 pages, illustrated. Sup't. Documents, Govern. Printing Off., Washington 25, D.C. 1955. Price \$4.25.

This volume on vascular surgery is among the first of the third series of historical works on the activities of the United States Army Medical Department in World War II. The first series of six volumes published during the years 1870-88, recorded the medical and surgical history of the Civil War; the second series, following World War I of fifteen volumes in seventeen parts (1921-29) devoted a single paragraph to vascular surgery.

The problem of supplying competent and specialized care for the numbers of vascular casualties in World War II, though a difficult one, was solved by the establishment of three vascular centers to which surgeons experienced in this field were attached. This centralization of cases afforded the first major opportunity to observe and carefully record the details and analysis of a large series of cases and the deductions and conclusions of this study became one of the major footstones of the ascent of vascular surgery to its present high level of development.

This volume, though published as a history of vascular injuries in World War II, is in actuality a text book on traumatic vascular surgery. The text includes the details and special tests employed in the evaluation of vascular status, surgical treatment of acute battle-incurred arterial injuries, aneurysms, arteriovenous fistulas and the exposure and management of blood vessels with excellent halftone anatomical illustrations. Three chapters are devoted to peripheral vascular disorders.

As this work so well describes the experiences and techniques during a giant stride in the development of vascular surgery, so should its reading and study be included in the development of the young surgeon of today, who in the future tomorrows will participate in reparative vascular

surgery as commonly as gastro-intestinal surgery of today.

CAPT. R. M. MUGRAGE, MC, USN

**THE INTERPRETATION OF THE UNIPOLAR ELECTROCARDIOGRAM.** By Gordon B. Myers, M.D., Professor of Medicine, Wayne University. 164 pages, 24 figures. C. V. Mosby Company, St. Louis. 1956. Price \$4.75.

This book is a compilation of the manuals employed by Dr. Myers for his well-known Graduate Course in Electrocardiography. That this course always plays to Standing Room Only is readily understandable to those familiar with Dr. Myers' excellent teaching ability. This syllabus of his course lives up, indeed, to its expectations.

Presented essentially in a logically expanded outline form the subject of Electrocardiography is readily understood and ensures the studious reader a truly practical and utilitarian concept of unipolar electrocardiography.

Dr. Myers, by employing time as a dimension, has taken a dynamic approach to the subject. He illustrates the serial changes that occur in the various leads at different intervals throughout the cardiac cycle. The teaching value of this approach is immediately evident from the illustrations and tables provided.

Dr. Myers rightly emphasizes that the electrocardiogram to be of maximum value must be integrated with a patient's history, physical findings, and correlated with laboratory, radiographic and other adjunctive studies.

The standard bipolar leads are dismissed, however, too summarily by the author for they still have intrinsic values of themselves and there may be a return to more extensive employment of bipolar leads. The evidence for failure of delay of the impulse at the A-V node is gaining favor over that for Kent's accessory bundle as the explanation of the "WPW" complex. The value of the U wave has been overlooked despite recent indications of its potential practical importance.

The Electrographic alterations brought about by chamber hypertrophy, coronary

disease and the arrhythmias are superbly described and illustrated.

On the whole, Dr. Myers is to be congratulated for this splendid text which will take its place in the front ranks of the several other excellent books on this subject. This book has the caliber one would expect Dr. Myers to write, and it will be of particular value to internists, thoracic surgeons, and general practitioners.

CAPT. JULIAN LOVE, MC, USN

**THE OFFICER'S GUIDE.** 22nd Edition. A Reference on Customs and Correct Procedures which pertain to commissioned officers of the United States Army. 545 pages. The Military Service Publishing Co. Harrisburg, Pa. Price \$5.00.

Entering its second quarter-century, *The Officer's Guide* still combines the characteristics of an old friend and a new lieutenant. The physiognomy and personality are familiar. The content is (with a few exceptions) as dated as the most recent crop from OCS.

Reservists may find the new edition useful as a means of keeping up with recent changes. It is not the sort of book that the officer currently on duty will read from front to back.

According to the publisher: "The newly appointed officer will find the book invaluable in adopting the right path to achievement, saving time and avoiding embarrassment. The experienced officer will use it as first reference, for suggestions and inspiration. There is no substitute for *The Officer's Guide*."

That is not a modest claim, but it is not far from wrong.

LT. COL. DOUGLAS LINDSEY, MC, USA

**MEDICAL SUPPORT OF THE ARMY AIR FORCES IN WORLD WAR II.** By Mae Mills Link and Hubert A. Coleman, Office of the Surgeon General, U. S. Air Force, Washington, D.C. 1027 pages. 1955. Sup't. of Documents, Gov't. Printing Office, Washington 25, D.C. Price \$7.00.

The early recognition of the need of specialized medical service for aviation personnel by Colonel Theodore C. Lyster, MC, was the beginning of our young medical specialty, Aviation Medicine. The work of the Lyster Board was recognized in 1916 by Major General William C. Gorgas, The Surgeon General, who placed a member of the board, Major I. H. Jones, MC, in charge of recruiting for aviation.

As aviation medical service increased in

stature, resistance from the traditional-minded element of the military medical organization became more pronounced. This reached its height during World War II with the divergent approach used by The Surgeon General and the Air Surgeon, toward a common goal of providing the best available medical service for personnel of the armed services. The Air Surgeon was probably the more fortunate in that he enjoyed command support throughout his period of office, including World War II. Regardless of their differences the latter remained sympathetic with the position of The Surgeon General who was not able to regain comparable prewar command support throughout the entire period of the World War II conflict. Fortunately the above differences did not penetrate too deeply into the medical service of the Army of the United States, so that the spirit of cooperation was frequently directly proportional to the distance from Washington. One of the most outstanding examples of cooperation occurred in the Mediterranean Theater of Operations during the Italian Campaign.

The establishment of the various Air Forces in different Theaters of Operations during 1942 and 1943 precipitated organizational and expansion problems which continued up to 1945. When the aviation medical organization began to reach the point of stabilization, the promotion and rotation of medical personnel, both officers and enlisted men, became a major problem and there was no policy with which to cope with the situation. This was aggravated by the rotation of field grade medical officers to overseas bases where they displaced medical officers who were often approaching eligibility for promotion in the position held.

Hospitalization of Air Force personnel during the Tunisian Campaign presented difficulties secondary to the rapid movement of the fighting which frequently left the Air Force units in an isolated area. This led to the spontaneous development of quarters type facilities at Squadron and Group level with supplies being the greatest problem. It also pressed the development of air evacuation to Ground Force or British hospitals which were often a hundred or more miles distance over impassable roads in so far as seriously injured or wounded personnel were concerned.

Medical air evacuation as we know it today became a recognized and respected procedure during the Tunisian Campaign. The lessons learned in North Africa were ap-

plied in the planning for the Sicilian and Italian Campaigns. The same lessons, however, were not accepted until later in other Theaters of Operations, because of the lack of coordination between responsible armed services or the nonavailability of aircraft to meet the evacuation requirement. Brig. Gen. Paul Hawley, Chief Surgeon, SOS, ETO, and Maj. Gen. A. W. Kenner, Chief Medical Officer, SHAEF, were very strong advocates of medical air evacuation during the campaigns on the European Continent. They were later joined by Brig. Gen. Malcolm C. Grow, Surgeon, 8th Air Force, and General Omar N. Bradley, 12th Army Group Commander, who were instrumental in obtaining aircraft and utilizing medical air evacuation in support of combat operations.

The Pacific and Asiatic Theaters of Operations received their share of the authors' attention in respect to the problem of an adverse environment which was absent in the European Theater. The over-all presentation of the above theaters, however, was not on par with that of the European show. One reason was probably a higher quality of unit histories from the latter Theater.

The authors have presented each subject and activity in considerable detail with documented support from the Air Force files. They frequently "give credit where credit is due" to personnel and activities of other services and our Allies in the conflict. The presentation of controversial subjects is somewhat biased because of the source of information for the preparation of the history of a single service. This volume should serve as a valuable source of material in both the text and the bibliography.

COL. WILLIAM H. BYRNE,  
MS (F/S) USA

**HAND SURGERY IN WORLD WAR II.** One of Series of Surgery in World War II by Medical Department, U. S. Army. Edited by Sterling Bunnell, M.D. Editor-in-Chief of series, Col. John B. Coates, Jr., MC, USA. 447 pages, illustrated. Sup't. of Documents, U. S. Gov't. Printing Office, Washington 25, D.C. 1955. Price \$3.75.

This book is one of a series being published about the activities of the Medical Department of the United States Army during World War II. This specific volume being reviewed represents a summary of the experiences in the treatment of the injured hand in the Army Medical Corps during World War II. It has been edited by Dr. Sterling Bunnell, who served as Civilian

Consultant for Hand Surgery to the Secretary of War.

This is a very valuable and important textbook, for it points out how in the beginning of World War II there was no definite plan established as to how the injured hand was to be treated at the front or in the Zone of Interior. The volume describes how, as a result of the lack of such planning, in many instances the injured hand received such poor treatment initially that attempts at salvaging the hand by reconstructive surgery later was greatly handicapped. Because of these results a definite program was evolved by Major General Norman T. Kirk, both for the treatment in the forward areas and in the Zone of Interior. In the latter area nine Hand Centers were established at army general hospitals for the treatment and reconstruction of the injured hand. It was proved conclusively in these centers that crippled hands were worth salvaging, but in order for such reconstructive surgery to be successful it was best carried out in a center staffed by medical officers versed in all of the specialties of plastic, orthopedic and neurosurgery.

Chapter I is by Dr. Condict W. Cutler, Jr., who reviews the advancement in surgery of the hand in the period between World War I and World War II.

Chapter II, by Dr. Sterling Bunnell, summarizes treatment techniques in the Army Hand Centers.

Chapter III, by Dr. Harvey S. Allen, outlines the experiences in the Mediterranean Theater of Operations, and one will find nowhere else such a beautiful description of acute trauma to the hand, with the pitfalls which one may experience in its treatment, and his suggestions as to methods of improving the end results. Many of the suggestions which he presents were later to be developed into specific directives, which were used as a guide to the management of the injured hand at the front and in the rear echelons.

Chapter IV is by Dr. Mather Cleveland, and outlines the experiences in the European Theater.

There follows in succession chapters written by each officer in charge of hand reconstruction in one of the general hospitals in the Zone of Interior which had been designated as a Hand Center by the Surgeon General. Each chapter recounts the activities and experiences in each center. In these latter chapters there is considerable repetition as each author describes the techniques of treating various types of problems in his own center. On the other hand, one will find that

in many instances while not having a different basic approach there were different minor techniques, and one will find that each center contributed a great deal to the progress in this important field of surgery.

The chapter by Dr. Sterling Bunnell, entitled "Conclusions on the Care of Injured Hands in World War II Derived From the Experiences of the Civilian Consultant for Hand Surgery to the Secretary of War," must be separately referred to; for in the reviewer's opinion it represents one of the most complete, concise, and simple descriptions of the treatment of the injured hand to appear in publication. In fifty-three pages Dr. Bunnell summarizes his experiences as consultant, and then goes on to outline in his precise and simple style methods for splinting the hand, his conclusions as to the best technique for the treatment of burns, fractures, tendon injuries, nerve injuries and techniques for tendon transfer, in addition to recommendations for occupational therapy.

This volume will serve as an excellent text not only for the military surgeon, present and future, but as well for all surgeons who are called upon to treat the injured hand. Its value for the Army Medical Service can best be summarized in the words of Major General George E. Armstrong, The Surgeon General, who writes in the foreword for this volume, "A survey of accomplishments of the Hand Centers leads to the conclusion that in the event of another major military emergency, the Army Medical Service will find it expedient to give serious consideration to the re-establishment of a special 'Hand Service' for the care of soldiers wounded in that extremity."

RAYMOND M. CURTIS, M.D.

ATLAS OF GENERAL SURGERY. By Joseph R. Wilder, M.D., Ass't. Professor of Surgery, New York Medical College and Flower Fifth Avenue Hospital. 222 pages, illustrated. The C. V. Mosby Company, St. Louis. 1955. Price \$13.50.

This is another atlas of surgical operations. There is no attempt in this atlas to present a complete treatise but instead the intention is to emphasize certain selected operations representative of general surgery. In the very beginning there is a brief summary of general fundamentals which are very concise and certainly most important for the readers for whom this book was written.

For each operative procedure, the author lists with some description the important

considerations, and then step by step the various stages of the operation are described and illustrated with very good drawings.

Since the book is admittedly not complete, it would have been better to eliminate descriptions of some procedures which are not adequately described. For instance, the description of a radical neck dissection is greatly lacking in detail. Another definite inadequacy is the description and illustrations depicting care of the recurrent laryngeal nerve in thyroid surgery. Here the nerve is identified in effect after the gland is already removed.

The section on biliary surgery is particularly well done and goes into pretty good detail in the various techniques and complications, pitfalls and corrections in this particular field.

The remainder of the book has the usual standard operative descriptions. In general the drawings are very good and clear.

To me the most significant accomplishment of this book is the very good treatment of the biliary surgery. The rest of the material is already available in many other surgical atlases.

RAY BROWN, M.D.

PATHOLOGIC PHYSIOLOGY, MECHANISM OF DISEASE. 2nd Ed. Edited by William A. Sodeman, M.D., F.A.C.P., Professor of Medicine and Chairman of the Dep't. of Medicine, School of Medicine, University of Missouri. W. B. Saunders Company, Philadelphia and London. 1956. Price \$13.00.

The first edition of this text was published in 1950. This present work is the collaborative efforts of 29 authors, most of whom are internists and nationally known. This edition exceeds the first by 156 pages. The approach is quite similar to that in the first edition, namely, to bring forth an analysis of the mechanisms responsible for the symptoms and signs of disease commonly seen by the physician. The work is not a substitute for the standard texts on physiology or medicine but does most admirably bridge the gap so commonly recognized as existing between these two texts. "Genetics, Growth and Neoplasia" by Dr. Madge T. Macklin, and "Nervous System" by Dr. Russell N. De Jong are new additions to this work. The content in general has undergone revision, in some areas quite extensively, with resultant improvement.

The material is presented in 12 parts: Pathologic Physiology; Genetics, Growth



and Neoplasia; Metabolism and the Endocrine Glands; Infection and Allergy; Physical, Toxic and Chemical Agents; Circulatory System; Respiratory System; Digestive System; Urinary Tract; Blood and Spleen; Locomotor System and Nervous System.

An excellent reference list is found at the end of each part. A comprehensive index which brings the work to a close is found at the end of the volume.

This text is most heartily recommended to the student and the busy practitioner as an up-to-date reference in the field of pathologic physiology.

COL. CHARLES R. MUELLER, USA, Ret.

**DOCTOR AND PATIENT AND THE LAW.** 3d Ed. By Louis J. Regan, M.D., LL.B., Professor of Legal Medicine, College of Medical Evangelists; Clinical Professor of Forensic Medicine, School of Medicine, Univ. of Southern California. 716 pages. C. V. Mosby Co., St. Louis. 1956. Price \$12.50.

This book deals with the second subdivision of Legal Medicine which involves a consideration of the problems arising out of the unique duties, privileges, and obligations which attach to the physician, dentist, nurse, and hospital, before the law and in relation to the patient.

It is beyond argument that if a practising physician is to escape legal liability and penalty he must have some understanding of his legal obligations to his patient and some knowledge of the laws and court decisions which are related to the several aspects of his practice.

This treatise consists of 21 chapters. Each subject is briefly discussed for orientation and is followed by numerous extracts of decided cases which serve to illustrate some or all of the points in the preceding discussion and also show conflicting decisions in some other jurisdictions and even in the same jurisdiction due to current changes in ideas. The conflicting decisions on similar facts tend to confuse physicians and demonstrate the need for early and frequent consultations with a lawyer who is familiar with local laws and tendencies of courts and juries.

Well over 3,000 decisions are cited from all of the 48 States, District of Columbia, Alaska, Hawaii, Canal Zone, Canada, and England. Over 400 other citations and references are in the text.

Emphasis is laid upon the necessity for meticulous attention to the dictates of good medical practice, consent for examinations and operations, good clinical records and the

best of judgement even in emergencies, tact in handling patients and relatives and ethical conduct toward patients and other physicians. Considerable space and emphasis is laid upon the subject of Malpractice Prophylaxis. As a suggestion, there are about 18 pertinent blank forms which may be appropriate for use before autopsy, operation, before the use of any hazardous therapy such as x-ray, etc.

While this book covers subjects included in an exhaustive manner, it in no way relieves the need for guidance by a competent lawyer.

COL. EDWARD A. COATES, JR., USA, RET.

**A MODERN PILGRIM'S PROGRESS FOR DIABETICS.** By Garfield G. Duncan, M.D., Clinical Professor of Medicine, Jefferson Medical College. 222 pages. W. B. Saunders Company, Philadelphia and London. 1956. Price \$2.50.

Here is a pocket-size book for the diabetic patient. The aim of the book is to give the diabetic patient a readable manual and to answer many of the questions a patient might ask the doctor. This is done by weaving into the story actual incidents which have occurred in the handling of diabetics.

The chief character of the book is Margaret ("Peggy") MacDowell, a social service worker in a Philadelphia hospital. "Peggy" is a diabetic who is greedy for knowledge on the subject of diabetes. She attends the clinics, visits in homes, becomes acquainted with and finally marries one of the doctors. While all of this is going on the author is instructing the reader.

The women diabetic patients will be interested particularly; men may not take to the book so readily though the lessons are there to be learned since men patients are brought into the picture.

The appendix of 62 pages contains instructions, charts, tables, tests, and diets. There is a glossary and an index. The back cover contains 12 Golden Rules.

A physician should not hesitate to recommend this book to his diabetic patients as the author has done a good job.

COL. ROBERT E. BITNER, USA, RET.

**OPERATIVE TECHNIC IN GENERAL SURGERY.** 2nd Ed. 67 Contributing Authors; edited by Warren H. Cole, M.D., F.A.C.S., Professor of Surgery and Head of the Dep't., University of Illinois College of Medicine. Introduction by Frank H. Lahey. 973 pages, illustrated. Appleton-Century-

Crofts, Inc., New York. 1955. Price \$20.00.

**OPERATIVE TECHNIC—SPECIALTY SURGERY.** 2nd Ed. Edited by Warren H. Cole, M.D., F.A.C.S., Professor of Surgery and Head of the Department, University of Illinois College of Medicine. With 67 contributors. This is a companion volume to *Operative Technic in General Surgery*. 967 pages, illustrated. Appleton-Century-Crofts, Inc., New York. 1956. Price \$20. (Set \$37.50)

Surgery, like most highly technical skills, is an ever changing and constantly improving human endeavor. The field of general surgery has grown so large that it is now broken down into a variety of surgical specialties. In view of the recognized complexities of disease, congenital anomalies and trauma affecting various systems of the body plus the rapidly developing knowledge of human physiology, it seems quite logical that the young surgeon today elects to "specialize" within the framework of general surgery. It must have been with this thought in mind that these two volumes on operative surgery were prepared.

*Operative Technic* was compiled, edited and first published by Dr. Cole in 1949, as a two volume edition. The 2nd edition of this surgical treatise has a similar format. The first volume is called "General Surgery" and the second volume covers "Special Surgery."

In the preparation of this monumental task the editor selected a group of 67 surgeons known and recognized for their surgical ability, teaching qualities and interest in research. Each author has prepared a chapter on a facet of surgery in which he has worked for many years and with which he is, by experience, thoroughly conversant. For these reasons these two volumes contain the most current thinking on a wide variety of surgical subjects.

The volume on "General Surgery" covers many of the basic principles of surgery common to most surgical text books, wound healing and care of wounds, burns, hemorrhage and shock, and abdominal incisions. Not only

are these general subjects discussed, but in addition, surgery of the various parts of the gastro-intestinal tract is described in detail. There are also chapters devoted to surgery of the breast, thyroid and parathyroids, surgery of the hand and tendons, and the surgical management of hernias. Three new chapters have been added to this volume: "Blood Transfusion and Allied Problems," "Gastro-intestinal Surgery in Infancy and Childhood," and a third chapter devoted to "The Appendix."

The second volume covers the more specialized types of surgery such as urology, gynecology, orthopedics, neurosurgery, fractures and plastic surgery. In addition, there are several chapters in which cardiovascular surgery is presented in considerable detail. Included in these chapters are: acute vascular injury, arteriovenous fistula, aneurysms and occlusive disease of the abdominal aorta, and surgery of congenital malformations of the heart and great vessels. Thoracic surgery and surgery of portal hypertension are also included in this volume.

Although the editor and the authors have purposely divided this surgical treatise into general and special surgery, it is apparent that they place great significance on the requirement for the young surgeon to be well grounded in basic general surgery prior to devoting himself to a single specialty. The corollary is also true that the general surgeon who is to be well rounded should have training in more than one or two specialties.

A review of this second edition of *Operative Technic* would be incomplete without calling attention to the excellent and adequate manner in which the text is illustrated with both black and white and color plates. Lastly, Appleton-Century-Crofts, Inc. and the Editor are to be commended for the selection of the large, legible type with which this edition has been printed.

It is the reviewer's hope that we may look forward at frequent intervals to succeeding editions of this very worthy contribution to surgical literature.

COL. DOUGLAS B. KENDRICK, MC, USA

## NEW BOOKS

- Progress in Hematology, Vol. I, 1956*, edited by Leandro M. Tocantins, M.D. Grune & Stratton, Inc., New York, N.Y. Price \$9.75.
- Endogenous Uveitis*, by Woods. The Williams & Wilkins Co., Baltimore, Md. Price \$12.50.
- UN—Peaceful Uses of Atomic Energy, Vol. 10, Radioactive Isotopes and Nuclear Radiations in Medicine*. Columbia University Press, New York, N.Y. Price \$8.00.
- UN—Peaceful Uses of Atomic Energy, Vol. 11, Biological Effects of Radiation*. Columbia University Press, New York, N.Y. Price \$8.00.
- Incidents et Eccidents de la Transfusion Sanguine. Prevention et Traitement*. By R. Andre, B. Dreyfus, et Ch. Salmon. Masson et Cie, 120 Boulevard Saint-Germain, Paris, France. Price 1,200 fr.
- Cardiac Pressures and Pulses. A Manual of Right and Left Heart Catheterization*. By Aldo A. Luisada, M.D. and Chi Kong Liu, M.D. Grune & Stratton, Inc. New York, N.Y. Price \$6.00.
- The Morphology of Human Blood Cells*, by L. W. Diggs, M.A., M.D., Dorothy Sturm and Ann Bell. W. B. Saunders Co., Philadelphia, Pa. Price \$12.00.
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- Clinical Cardiopulmonary Physiology*, Editor-in-Chief, Burgess L. Gordon, M.D. Grune & Stratton, Inc., New York, N.Y. Price \$15.75.
- The Doctor's Marital Guide for Patients*, by Dr. Bernard R. Greenblat. Sample copies will be mailed to physicians upon request. The Budlong Press, 5428 N. Virginia Ave., Chicago 25, Ill.
- Clinical Orthopaedics, No. 7*. Editor-in-Chief Anthony F. DePalma, M.D. J. B. Lippincott Co., Philadelphia, Pa. Price \$7.50.
- Supplement I, Atlas of Exfoliative Cytology*, by George N. Papanicolaou, M.D. Harvard University Press, Cambridge, Mass. Price \$4.00.
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- Corneal Grafts*, Edited by B. W. Rycroft, O.B.E., M.D. The C. V. Mosby Co., St. Louis, Mo. Price \$13.50.
- Clinical Urology*, by Oswald S. Lowsley and Thomas J. Kirwin. 3rd ed. 2 Vols. The Williams & Wilkins Co., Baltimore, Md. Price \$32.50 the set.
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